CURRENT CONDITIONS REPORT
RCRA Facility Investigation
Southern California Chemical
June 8, 1990

Prepared for:

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Santa Fe Springs, CA

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Section 1

1.0 INTRODUCTION

1.1 Purpose

This report presents a summary and evaluation of existing information related to the Southern California Chemical facility in Santa Fe Springs, California. Presentation of this information is designed to satisfy the requirements of the Administrative Order on Consent (Consent Order) executed on December 8, 1988, by U.S. EPA Region IX, under the Resource Conservation and Recovery Act (RCRA).

This Current Conditions Report (CCR) has been prepared as a component of the RCRA Facility Investigation (RFI) program. It is designed to present and evaluate existing data and general information pertinent to the SCC facility, the nature and extent of environmental contamination and past and current facility investigations. Included are summaries of regional location, general facility and local physiography, climate, geology, hydrogeology, historical ownership and use of the facility and spill and response action history.

1.2 Organization of Report

This report is organized into six sections as briefly described below:

- <u>Section 1.0</u> - This section described the purpose of the CCR and briefly outlined the major topics discussed within it.

- <u>Section 2.0</u> This section provides a brief, introductory description of the SCC facility's location, ownership, and operations.

- <u>Section 3.0</u> - This section contains general information on the location and environmental setting of the SCC facility. Information was compiled primarily from literature reviews of academic publications, consultant reports, regulatory critiques, miscellaneous letters and interviews. A reference list is included in Section 9.

- Section 4.0 - This section describes the ownership and operational history of the SCC facility. Included in these descriptions are previous owners and their activities and a partial chronology of the evolution of hazardous waste generation, treatment, storage and disposal areas and units at the facility.

- Section 5.0 - This section describes the circumstances surrounding documented spills, including response actions taken to remediate them. The general nature of spill containment and control-related issues are discussed as well.

- Section 6.0 - This section describes the current understanding of the nature and extent of contamination at the SCC facility. Described are known types and concentrations of both organic and inorganic compounds which have been detected in both soil and groundwater.

- Section 7.0 - All past investigations at the facility are documented in this section. The scopes of work, findings and recommendations for each are discussed.

- Section 8.0 - All investigations currently being conducted at the facility are documented in this section. The objectives, schedules and corrective measures planned or currently being employed under each investigation are described. This section also presents a list of items considered to be factually inaccurate in the RCRA Facility Assessment (RFA) which may have a bearing on the performance of certain aspects of the RFI.

- Section 9.0 - References.

Section 2

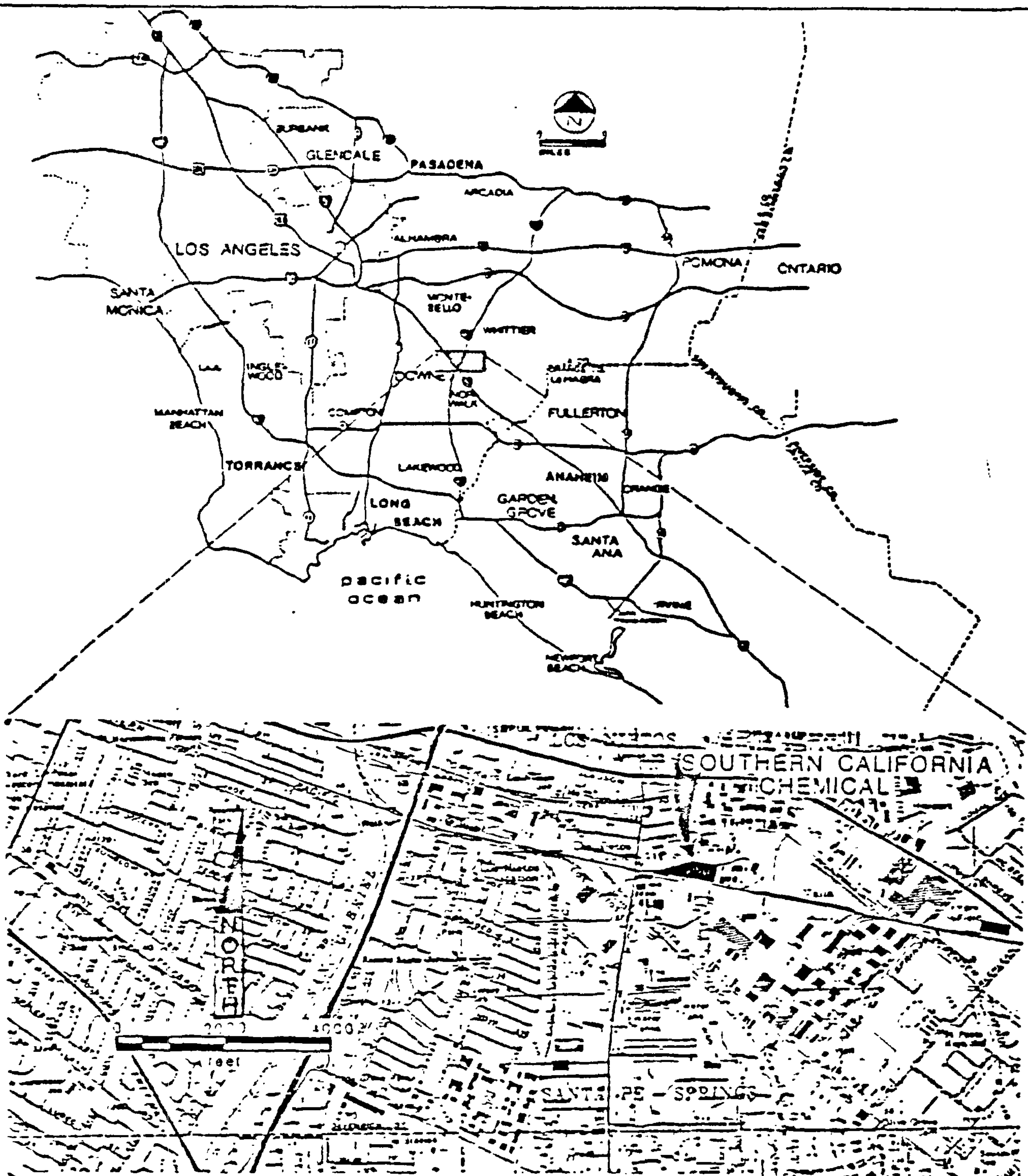
2.0 FACILITY BACKGROUND

Southern California Chemical (SCC) owns and has operated since 1958, an inorganic chemical manufacturing and recycling facility at 8851 Dice Road in Santa Fe Springs, Los Angeles County, California (Figure 1). SCC is a division of of CP Chemicals, Inc., a New Jersey corporation which is a wholly-owned subsidiary of Philipp Brothers Chemicals, Inc., a New York corporation. Both corporate offices are located at One Parker Plaza, Fort Lee, NJ 07024.

SCC presently operates as a RCRA Interim Status Hazardous Waste Management Facility. In addition, SCC currently operates under a Conditional Use Permit issued by the city of Santa Fe Springs. The facility operates a variety of waste management units and manufacturing and operational processes including holding ponds, settling tanks, holding tanks, waste-water treatment tanks, filter presses, multi-stage clarifiers, process and storm drain sumps, drum storage areas, and drum and truck washing areas.

SCC receives a variety of aqueous hazardous wastes and recyclable materials from generators primarily in the electronics and aerospace industries. These materials are treated and/or disposed through the generation of new products for sale or through the neutralization and discharge of aqueous wastes to the sanitary sewer. Hazardous residues and sludges generated by the facility are transported to a Class I landfill and/or a heavy metal smelter/producer.

Some of the wastes presently managed by SCC include spent etchants, solder strippers, pickling acids, plating solutions, conditioners and brighteners. These compounds variably contain copper, iron, ammonium bifluoride, tin, lead, chromium, nickel, assorted trace heavy metals, sulfates, chlorides and hydroxides. In turn, SCC manufactures various inorganic chemicals including copper chloride, copper ammonium chloride, copper sulfates, ferrous chlorides and ferric chlorides. SCC also produces products from virgin materials (non-recycled). These products, some of which are



NOTE: Base map reduced from U.S.G.S. 7.5' topographic sheet, Whittier Quadrangle.

SOURCE: JAN. 6, 1986, J. H. KLEINFELDER AND ASSOCIATES, ENVIRONMENTAL ASSESSMENT SOUTHERN CALIFORNIA CHEMICAL COMPANY, SANTA FE SPRINGS.

Southern California Chemical	
SITE LOCATION MAP	
Camp Dresser & McKee CDM	Figure 1

patented and proprietary, are sold back to the industries that generate them and to industry at large.

Wastes presently handled by the facility contain various heavy metals, waste acids, corrosives, sulfates, chlorides and nitrates. Heavy metals generated include copper, nickel, chromium, iron, lead, tin and zinc.

Section 3

3.0 ENVIRONMENTAL SETTING

3.1 Location

The SCC facility is located at 8851 Dice Road in Santa Fe Springs, Los Angeles County, California (Figure 1). The facility occupies a 4.8-acre site in a highly industrialized area of the city. Figure 2 shows the present site configuration. Industrial facilities surround the SCC facility to the north, east and west. The facility is immediately bordered to the south, west and north by railroad tracks. The nearest residential areas are located approximately 1,000 feet to the north (Kearney and S.A.I.C, 1987).

3.2 Physiography

The SCC facility is located in the Santa Fe Springs Plains, a low, slightly rolling alluvial plain which dips northeast towards the city of Whittier. The Santa Fe Springs Plains are part of the Coastal Plain of Los Angeles County (Kearney and S.A.I.C, 1987, DWR, 1961). The facility is situated on relatively flat land which slopes very gently from northeast to southwest. Elevations at the facility range from approximately 148 to 154 feet Mean Sea Level (MSL) (Kearney and S.A.I.C, 1987) (Figure 3).

3.3 Climate

Climate in the vicinity of the SCC facility is characterized as semi-arid with a mean annual temperature of approximately 62°F. Recorded extremes in nearby areas within the Los Angeles Basin range between 18°F and 116°F. (Kearney and S.A.I.C., 1987) Average annual rainfall for the area is approximately 13-14 inches, occurring primarily between December and April (RWQCB, 1986). Precipitation is exceeded by evaporation during most of the year (Kearney and S.A.I.C., 1987). As shown on Figure 2, the prevailing wind direction, although variable, is predominantly southwest.

3.4 Surface Water Hydrology

The SCC facility is located slightly one mile east of the San Gabriel River, the largest surface water body in the vicinity (Figure 4). Regional drainage is directly towards the San Gabriel, however, local drainage is discharged to the Sorenson Avenue drain, located approximately 0.25 mile northeast of the facility, via an unnamed drainage ditch bordering the facility to the south. The drain feeds into La Canada Leffingwell Creek, forming La Canada Verde Creek, which in turn feeds into Coyote Creek approximately 5.2 miles to the southeast of the facility. Local drainage effectively is discharged to the San Gabriel River since Coyote Creek is one of its tributaries.

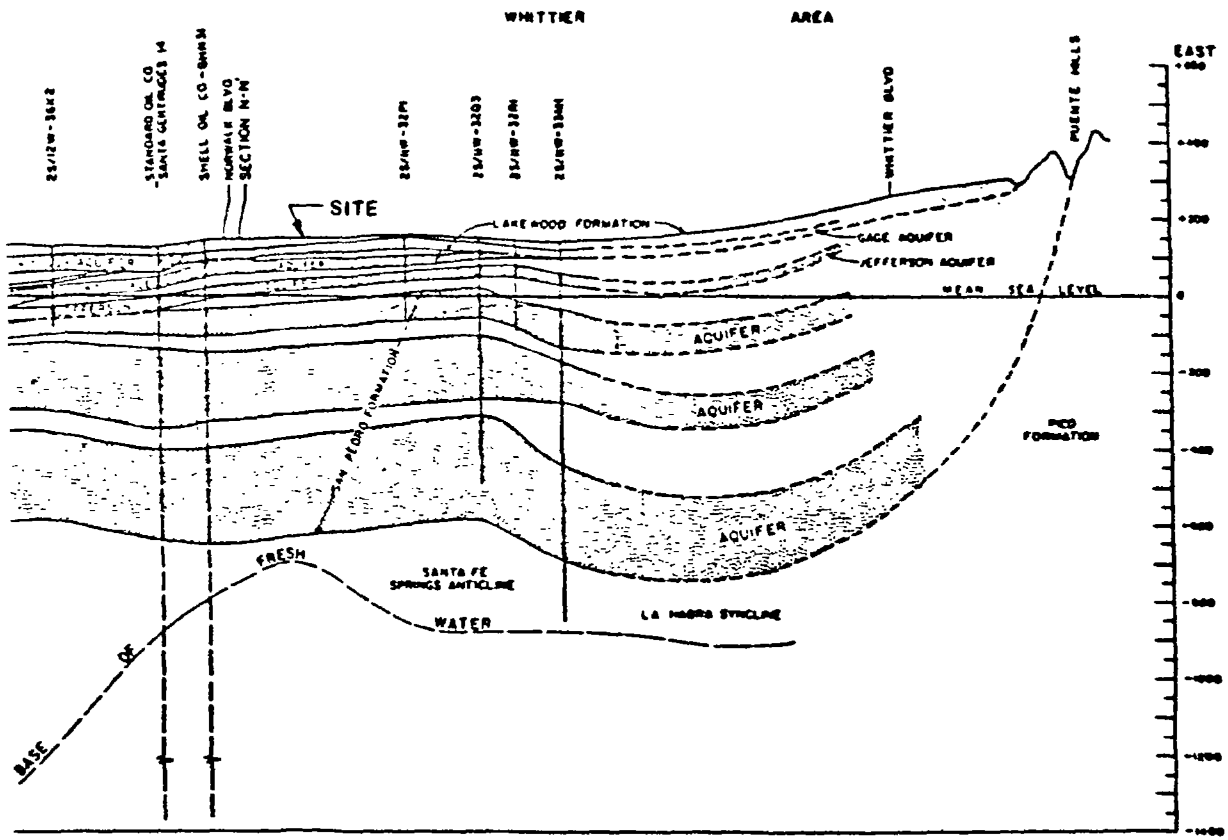
With the exception of the front parking and office areas of the facility, all site drainage is retained and treated on-site before being discharged to the municipal industrial wastewater sewer line located on Burke Street.

Ground water recharge basins are located 1.5 to 2.0 miles northeast of the facility (RWQCB, 1986) along the San Gabriel River. The San Gabriel flows southwesterly through the area. Other natural streams in the Santa Fe Springs area are intermittent.

3.5 Geology

3.5.1 Stratigraphy

The SCC facility is situated on a surface exposure of the Bellflower Aquiclude, a facies of the Lakewood Formation alluvium which is comprised of upper Pleistocene stream and flood plain deposits (RWQCB, 1986) (Figure 5, see also: Kleinfelder Fence Diagram, Plate 12, Appendix C). The Bellflower Aquiclude is approximately 5 to 15 feet thick at the facility and consists of low permeability clays, silts, silty clays, sandy clays and gravelly clays (Kleinfelder, 1985) (RWQCB, 1986). Approximately 0.5 mile south of the facility, the Bellflower Aquiclude exhibits sand and gravel with increased, though still restricted, permeability (Kleinfelder, 1985; DWR, 1961).



MODIFIED FROM: 1961, DWR BULLETIN NO. 104, PLANNED UTILIZATION OF THE GROUND WATER BASINS OF THE COASTAL PLAIN OF LOS ANGELES COUNTY

HORIZONTAL SCALE OF FEET
2000 0 2000 4000 6000

Southern California Chemical	
EAST / WEST REGIONAL GEOLOGIC CROSS SECTION	
Camp Dresser & McKee CDM	Figure 5

The Bellflower Aquiclude overlies the Gage Aquifer which is the lowest member of the Lakewood Formation. The Gage Aquifer consists of fine to medium sand with variable amounts of gravel, sandy silt, and clay of both marine and continental origin. The aquifer extends over most of the coastal plain of Los Angeles and is known to attain depths up to 350 feet below the ground surface (DWR, 1961). At the facility, the aquifer is present as a fine to medium sand unit approximately 20 feet thick with an average basal depth of 30 feet (RWQCB, 1986) (Kleinfelder, 1985).

The Lakewood Formation unconformably overlies the San Pedro Formation which underlies most, if not all, of the coastal plain of Los Angeles County (DWR, 1961). The San Pedro Formation is generally composed of stratified sand with some beds of fine gravel, silty sand and silt of both marine and continental origin. The thickness of the San Pedro Formation varies between 400 and 1,350 feet.

Several aquifers and unnamed aquitards comprise the San Pedro Formation (DWR, 1961). The uppermost unit of the San Pedro Formation present under the facility is an unnamed aquitard which overlies and separates the Hollydale Aquifer from the Gage Aquifer of the Lakewood Formation. The aquitard is comprised of clayey silts and silty clays and ranges from 5 to 30 feet thick at the facility (RWQCB, 1986).

The Hollydale Aquifer is the uppermost aquifer of the San Pedro Formation. It is a discontinuous unit variably comprised of sands, gravels, muds, clays and marine shells. Locally the unit is present as brown, silty sand, fine to median sands with some gravel and pebbles. The aquifer is approximately 40 feet thick under the facility with a maximum basal depth of approximately 100 feet. Regionally, the Hollydale Aquifer is known to attain depths up to 500 feet below sea level.

The Hollydale Aquifer overlies a thin aquitard, approximately 10 feet thick, which in turn overlies the Jefferson Aquifer. The Jefferson Aquifer is an extensive unit which has undergone considerable folding. It varies in thickness from just a few feet to a maximum of 140 feet with a basal elevation that ranges from 700 feet below sea level to 50 feet above sea level (DWR, 1961). At the facility the Jefferson Aquifer is estimated to be at least 20 feet thick and consists, partially at least, of silt and fine sand. The aquifer is known to contain gravelly and clayey lenses in other areas (DWR, 1961).

The Lynwood, Silverado and Sunnyside Aquifers underlie each other, respectively, and comprise the remainder of the San Pedro Formation. The San Pedro Formation is underlain by the Pliocene Pico and Repetto Formations, and the Miocene Puente Formation (Kleinfelder, 1985; DWR, 1961). The existence of these aquifers and formations under the facility is assumed but has not been verified by boreholes or subsurface geophysical methods. The understanding of the character of these aquifers is limited to literature descriptions at present.

3.5.2 Structure

The SCC facility is located within the Santa Fe Springs Plain, an alluvial plain which is apparently a continuation of the Coyote Hills uplift to the southeast (DWR 1961). The plain has probably been warped by the Santa Fe Springs-Coyote Hills anticlinal system, dipping both northeast towards Whittier and southeast towards the Downey Plain (DWR, 1961).

The Santa Fe Springs Plain is underlain by an elongated anticlinal dome known as the Santa Fe Springs Anticline. The anticline trends northwest, is symmetrical and has gently dipping flanks (DWR, 1961). The San Pedro and Lakewood Formations are folded over the structure and have a minimum combined thickness of 700 feet above it (DWR, 1961).

Several miles to the northeast of the facility the primary regional structure is the Whittier Fault Zone. This structure trends southeast along the southern flanks of the Puente Hills and extends from the vicinity of Whittier Narrows into Orange County (DWR, 1961). The fault is a high angle reverse fault, with the north side rising over the south side at an angle of approximately 70 degrees (DWR, 1961).

3.6 Hydrogeology

The SCC facility is located in the Central Ground Water Basin of the Los Angeles County Coastal Plain. The Central Basin is bounded on the north by the Hollywood Basin and by a series of low hills extending from the Elysian Hills on the northwest to the Puente Hills on the southeast. In literature, the Central Basin is arbitrarily separated from ground water basins to the north where there are breaks in the line of hills such as the Whittier and Los Angeles Narrows. To the west and south, the Central Basin is bounded by the Newport Inglewood uplift. The basin is bounded on the southeast by an arbitrary line based on the Los Angeles-Orange County line.

The Central Basin is further divided into four parts; the Los Angeles Forebay area, the Montebello Forebay area, the Central Basin Pressure area, and the Whittier Forebay area. Forebay areas are those with generally phreatic or unconfined ground water where substantial infiltration of surface water could occur. Pressure areas are those with aquifers that are generally confined between relatively impermeable layers of considerable lateral extent wherein infiltration is restricted. Because of the heterogeneous pattern of these areas their exact delineation is somewhat arbitrary.

The SCC facility is located near the juncture of the Montebello and Whittier forebay areas and the Central Basin pressure area. Evidence of artesian conditions and alternating aquifer and aquiclude stratigraphy from boreholes indicate that the facility is located in a pressure area although literature maps indicate that the facility is geographically located in the Montebello forebay area. The Bellflower aquiclude, however, is found in this area (DWR, 1961) and is known to be a confining unit in many areas.

The Gage Aquifer is the uppermost aquifer in the region, however, in the vicinity of the facility the aquifer has been documented as being essentially dry. This issue has been contested by the regulatory agencies and will require further evaluation during the course of the RFI for resolution. In the interim, for the purposes of designing the RFI Work-plan, it is assumed that the Hollydale Aquifer is the uppermost water-bearing aquifer at the facility. To date, all ground water samples have been obtained from this aquifer.

Available information indicates that estimates of ground water transmissivities in the Hollydale aquifer range from 10,000 to 40,000 gal/day/ft. Similarly, permeabilities for the Hollydale have been estimated to range from 25 to 8,000 gal/day/ft^2. Comments by the regulatory agencies in the Comprehensive Monitoring Evaluation (6/3/88) request that additional determinations of velocity values be made. Proposed methodologies for assessing transmissivities during the course of the RFI are included in the RFI Work Plan.

Field observations made by J.H. Kleinfelder staff during drilling operations for the Hydrogeologic Assessment of late 1985 and early 1986 and in finished monitoring wells indicate that there is a vertical upward component to the ground water flow, due to confining pressures. The confining pressures were exemplified by increases in water levels of up to 10 feet in soil borings when the confining unit separating the Gage and Hollydale aquifers was penetrated. As noted in Section 4.1 (page 4) of the Environmental Monitoring Study (Kleinfelder, July 1985), the use of hollow-stem auger equipment below a depth of 45 feet was impossible owing to artesian ground water conditions. In addition, an examination of the lithologic log for boring No. 1 contained in the appendix to the report (Appendix A, Plate 4) revealed that ground water was first encountered at a depth of 48 feet during drilling, then subsequently was measured at 43.61 feet (a rise of 4.4 feet). This indicates that hydraulic interconnection of the Gage and Hollydale aquifers at the facility is non-existent in the best case and limited in the worst case. The fact that vertical gradients are ascendant also indicates that the Hollydale may be less susceptible to downward migration of contaminants. Available information indicates that the Gage and Hollydale aquifers are interconnected in areas approximately 0.25 mile northwest, 1.0 mile east and 1.0 mile southwest of the facility (DWR, 1961).

Kleinfelder also noted evidence of a vertical gradient between the upper and lower Hollydale Aquifer. In their July 1988 response to the CME

(RWQCB, February 1988) regarding a vertical gradient (item No. 20, page 7), Kleinfelder stated that elevation differences between MW4 and MW4A indicated that a positive (upward) gradient of up to 4.5 feet existed between the upper and lower portions of the Hollydale aquifer. They concluded that additional deeper wells would be required to make a reasonable conclusion. The RFI Work Plan proposes the installation of six additional deep monitoring wells in the lower Hollywood aquifer to resolve this issue.

Available information indicates that the Jefferson Aquifer underlies the Hollydale Aquifer and is generally separated from it by a 10 to 20 foot thick aquiclude (DWR, 1961). The hydraulic relationship of these two aquifers at the facility is unknown at this time but available information indicates that the two are hydraulically interconnected approximately 0.5 mile to the north.

The general regional ground water gradient in the Santa Fe Springs area is south to southwest. Water levels in facility monitoring wells indicate a site-specific flow to the south-southwest. Ground water level contour maps developed from quarterly sampling data for the period March 1986 to January 1990 are included in Appendix J. A review of these data indicate that ground water levels at the site are seasonally higher in late spring and summer and seasonally lower in late fall and winter. The data also show that water levels in on-site wells have declined by as much as 10 feet between mid-1985 and mid-1988. Representatives of the Central and Western Basin Water Districts indicate that regional decreases in ground water levels has been due to construction on the Montebello recharge basins and an increase in overall regional pumpage. The effect of dewatering on artesian conditions (piezometric pressure) in the Hollydale is not specifically documented for the facility. Water elevations, however, did exhibit a 0.84 to 2.46 feet decrease between the September 1988 and January 1989 quarterly sampling. At present, depth to water in monitoring wells ranges from approximately 53 to 58 feet.

The following production wells are located within a one-mile radius of the site (Figure 4):

State Well No.	Owner
2S/11W-29E05	Apex Bulk Commodities Associates of Los Angeles
2S/11-30Q05	Mutual Water Owners Associates of Los Nietos
2S/11W-30R03	City of Santa Fe Springs
3S/11W-32J04	Whittier Union High School

No information was discovered at the time of this printing describing the volume, water quality, radius of influence, or use status of these wells. An effort will be made to develop this information during the RFI.

Section 4

4.0 FACILITY HISTORY

4.1 Ownership History

Although available information about the facility's earliest ownership and development is scarce, the facility property has apparently been owned, leased, and/or operated by several parties. Reportedly, the site was leased by parties from Southern Pacific Railroad until it was purchased by an affiliation of CP Chemicals, Inc. in 1984.

The earliest use of the facility reportedly was as a railroad switching station. From approximately the late 1940s to early 1950s the site was occupied by a foundry casting facility. Pacific Western Chemical Company occupied the site from 1957-1960. On December 24, 1959 the name of the firm was changed to Southern California Chemical. Data show that the property was leased by SCC from the Pacific Electric Railway Company and that negotiations to purchase the property were active in April 1968. Presently, SCC is a division of CP Chemicals, Inc., a New Jersey corporation which is a division of Philipp Brothers Chemicals, Inc., a New York corporation.

4.2 Chronology of Critical Events

The following is a chronologic list of major events, communications, agreements, Notices of Violation, submittals and miscellaneous information concerning the history of the facility from October 1957 to April 6, 1989 (date of submittal of Draft Current Conditions Report).

10/57	Pacific Western Chemical requests permit for industrial waste disposal, ferric chloride production, and off-site shipping of sludge.
12/57	Permit transferred to city of Santa Fe Springs due to annexation.
3/59	L.A. County Sanitation District issues permit to discharge chromium recovery by-products to sewer system.
8/59	L.A. County Engineer issues inspector's report and Notice of Violation for dumping hexavelent chromium to ground on-site along road entrance and on adjacent properties.

12/24/59	Firm name changes from Pacific Western Chemical Company to Southern California Chemical.
12/60	Santa Fe Springs City Engineer notifies SCC that it must meet sewer system requirements, noting discharge of run-off is possibly contaminating ground at facility.
1961	L.A. County Engineer issues complaint of sludge discharge to sewer system which contains 19.5% volatile solids, iron, aluminum, phosphate and chrome.
2/61	SCC submits letter of compliance.
8/61	SCC submits letter to L.A. County Engineer indicating the existence of a product sludge settling and drying pond that is partially unlined, also stating that it is unknown as to the period of time the pond was used prior to being partially sealed with asphalt.
1963	SCC begins accepting industrial wastes.
2/24/64	Inspector's report indicates a highly caustic waste is spilled to ground and that an acid waste is being used as a dust control on the service road (entrance road).
1966	SCC receives complaint of discharge to railroad tracks.
2/17/66	Inspector's report indicates that SCC will install a catch basin to prevent spillages and leaks to ground in bottling and washing area.
1968	L.A. County Engineer distributes interoffice memorandum stating that SCC facility may have "critical ground water pollution problems due to ground disposal of toxic wastes."
4/17/68	Inspector's report indicates that SCC leases the facility from the Pacific Electric Railway Company and that negotiations are underway to purchase property.
4/22/68	Industrial Waste Division registers complaint against SCC indicating that wastes are being discharged to the railroad right of way adjacent to the site, and that such waste discharges have been noted for two years prior. SCC reportedly claims discharge was from a broken fresh water line indicating that it was repaired immediately.
11/15/68	Inspector's memorandum notes visible evidence of wastewater discharge to ground. Run-off noted as discharging to railroad right of way and into an adjacent field where it percolated into the ground. Memorandum also notes that up-grading of plant operations is in progress.

9/22/69	Inspector's memorandum indicates run-off is continuing to be discharged to railroad right of way.
12/13/69	L.A. County Sanitation District orders SCC to stop discharging to the sewer due to high concentrations of copper, chromium, nickel, zinc, and iron, attributing upset of county sludge treatment plant(s) to SCC and requiring submittal of plans to improve discharge levels.
1971	SCC denied Industrial Waste Discharge Permit for sewer.
12/20/71	SCC submits an engineering evaluation of the site describing contamination sources, wastewater flow and disposal points, clean-up and wash out procedures, and industrial wastewater collection points, treatment basins and discharge points.
2/22/74	SCC issued permit for industrial wastewater discharge for ammonia, copper, iron, chromium, zinc, chloride and sodium at 14,000 gpd.
1975	L.A. County Engineer registers complaint that firm has had a long history of discharging wastes to the railroad right of way.
6/5/75	Inspector's report indicates no clean-up actions taken on industrial wastewater discharged to the railroad right of way. Notice of Violation and Order to Comply by 6/23/75 issued.
6/12/75	RWQCB issues compliance notice for "site" to be cleaned up by 12/1/75.
1976	SCC issued complaint for removal of Class I wastes to Class III landfill. Norwalk landfill subsequently ordered not to receive wastes.
2/24/76	Notice of Violation and Order to Comply issued instructing SCC to construct the settling pond discharge line through the interceptor. SCC claims to have received permission from the L.A. Sanitation District to bypass the interceptor.
4/7/76	Notice of Violation and Order to Comply issued instructing SCC to immediately cease and desist from depositing sludge from the final discharge settling pond to the bermed pit on the property and to remove to a legal point of discharge. In addition, SCC is instructed to immediately remove wastewater and contaminated dirt from the storm drain-ditch parallel to the railroad right of way to a legal point of disposal.
12/30/77	Violation issued for contaminated stormwater run-off to railroad right of way.

1/3/78	RWQCB issues Violation Cease and Desist Order for discharge of wastes from the holding pond into the railroad right of way indicating that wastes flowed to the drainage ditch with discharge being facilitated via two hoses siphoning the pond.
7/16/78	Failure of SCC's wastewater treatment system connections causes overflow and discharge of industrial wastes to public streets and private property in the area east of Norwalk Boulevard and south of Slauson Avenue, including Palley Supply Company, the railroad right of way and the storm drain system at Burke Street.
7/24/78	County of Los Angeles Department of County Engineer-Facilities requests District Attorney's office to issue a complaint against SCC for allowing the continued existence of discharged industrial wastes.
8/8/78	RWQCB issues a Clean-up and Abatement Order (#78-1) to SCC in response to an intentional or negligent discharge on or about 5/21/76 of waste liquids at various locations at and adjacent to the facility in such a manner as to cause saturation of the soil.
8/24/78	County of Los Angeles Department of County Engineer-Facilities informs SCC that a misdemeanor complaint (#M128091) has been filed by the District Attorney's office for the 7/16/78 industrial waste liquid spill.
7/79	During court trial for 1978 misdemeanor complaint (#M128091) SCC is found guilty and fined $200.
1/80	SCC applies for RCRA interim status for container storage area and wastewater treatment pond.
1/30/80	SCC files a Part A application for operation of a storage and treatment facility using tanks, containers and surface impoundments.
12/6/81	Facility interim status document issued requiring RCRA ground water monitoring.
12/16/81	Interim status permit granted by DHS to SCC.
9/20/82	SCC requests assistance from DHS in locating alternative disposal sites indicating that although Puente Hills is apparently a suitable disposal site, they have been directed to refuse anything containing metals.
7/27/83	SCC requests variance from RCRA groundwater monitoring requirements and receipt of plant delisting forms from DHS. SCC addresses underground storage tanks concerns of RWQCB and contests request for groundwater monitoring.

10/31/83	EPA notifies DHS and L.A. County District Attorney that SCC is possibly discharging hazardous waste in an unlawful manner.
2/22/84	DHS conducts a facility inspection and identifies 9 violations of the Hazardous Waste Control Law and the Code of Federal Regulations.
3/28/84	SCC submits request to DHS for a variance or continuance of an existing variance from "closure" and "post-closure" requirements on the basis that the facility is not a disposal site or landfill.
3/30/84	DHS issues Notice of Violation and Directive to Comply in response to 2/22/84 site inspection.
4/9/84	SCC disputes 3/30/84 NOV and requests DHS to immediately submit copies of the 2/22/84 inspection report and to retract allegations about SCC treating and disposing of hazardous wastes "in manners not permitted by the Department."
5/1/84	On behalf of SCC, Livingston and Mattesich requests a copy of the Report of Violation prepared subsequent to the 2/22/84 DHS inspection.
5/10/84	DHS issues Inspection Report, Notice of Violation and Directive to Comply on eight violations to 40 CFR 265, California Health and Safety Code and the Interim Status Document.
5/18/84	SCC directed by RWQCB to install RCRA groundwater monitoring system and submit a work plan by 6/1/84.
	RWQCB requires SCC to submit, by 6/1/84, all ground water monitoring, sampling and analysis data as required in the Interim Status Document (ISD). Response required of SCC by 5/25/84.
5/23/84	SCC submits comments indicating belief that materials are beneficially used and therefore the facility should be exempted from RCRA ground water monitoring requirements. SCC indicates intentions to implement an alternate monitoring program.
5/24/84	SCC submits letter of response to DHS on 5/10/84 Notice of Violation indicating completion of, and active attention to, violation response requirements.
7/2/84	SCC submits revised RCRA groundwater monitoring proposal.
8/10/84	DHS, L.A. District Attorney's office, Sanitation District, and Engineer's office conduct joint site inspection to look for violations of the Hazardous Waste Control Law. Discharges were noted, samples taken and a Notice of Violation and Directive to Comply was sent to SCC.

9/21/84	RWQCB and DHS submit joint comments to SCC and request submission of final RCRA ground water monitoring program by 10/20/84.
9/27/84	SCC's attorney asks DHS to clarify SCC's obligation under RCRA ground water regulations on the basis that ponds were believed to be categorized as "underground tanks" rather than surface impoundments.
10/19/84	Failure of SCC's sewer line causes discharge of approximately 500 gallons of industrial wastewater, reportedly identified as ammonium dioxide.
10/24/84	RWQCB contacts SCC to inquire about late submittal of RCRA ground water monitoring plan. SCC informs RWQCB of intent to file request for extension.
10/26/84	SCC's attorney suggests to RWQCB that surface impoundments at the facility, on the basis of non-earthen construction materials, should be considered underground tanks. In addition, he relays SCC's intentions to convert from ponds to above ground wastewater treatment tank systems and requests a 30-day extension on the ground water monitoring plan submittal.
12/11/84	RWQCB gives SCC approval of RCRA ground water monitoring program, per conditional changes. Monthly progress reports required, first one due 1/16/85.
__/85	RCRA groundwater monitoring system installed.
1/21/85	J. H. Kleinfelder & Associates submits monthly progress report on ground water monitoring program to RWQCB.
3/85	RCRA ground water detection monitoring initiated by SCC. Hazardous waste constituents initially detected. Original ground water monitoring system expanded.
5/8/85	EPA requests that SCC submit a Part B application for a hazardous waste facility permit by November 8, 1985.
5/10/85	SCC notifies DHS and EPA of groundwater contamination. RWQCB and DHS direct SCC to prepare an assessment plan.
5/13/85	SCC (via law firm of Heller, Ehrman, White & McAuliffe [HEW & M]) notifies RWQCB of intention to close Pond 1 by replacing it with a dual 30,000 gallon, above-ground tank system.
6/10/85	RWQCB, upon learning of plans to close Pond 1, requests SCC to submit a Post-Closure Permit with EPA in lieu of a Part B application. In addition, SCC is directed to submit a site investigation plan by July 1, 1985.

7/9/85	RWQCB informs SCC that DHS will act as lead agency in site assessment.
7/85	SCC initiates site assessment activities. SCC installs dual 30,000 gallon aboveground wastewater treatment tank system.
7/24/85	SCC and RWQCB resample groundwater and confirm results of 3/85 analyses.
7/30/85	SCC submits Pond #1 closure plan to EPA and RWQCB. Closure plan implemented without written approval of agencies.
8/29/85	SCC conducts aquifer pump test.
10/24/85	SCC submits final Phase I Assessment report "Hydrogeologic Assessment of Pond Number 1" to DHS.
1/30/86	EPA conducts hazardous waste investigation at facility noting 34 potential violations to 40 CFR 265 and 40 CFR 261.
3/5/86	SCC submits Phase II Assessment and Environmental Assessment report to the agencies.
3/86	RWQCB and SCC conduct split sampling of groundwater.
3/86	RWQCB conducts FY 1985-86 annual RCRA Comprehensive Monitoring Evaluation inspection.
3/13/86	RWQCB submits review comments and recommendations for Pond #1 closure plan, recommending that SCC must submit a closure certification in order to justify proper closure. RWQCB sends DHS memo on Pond #1 closure, stating that a revised closure plan, addressing regulatory comments, a post closure monitoring program, and recommended Remedial Action Plan must be submitted.
3/25/86	DHS conducts an inspection of SCC's hazardous waste management units and identifies violations of California Hazardous Waste Control Law and RCRA and regulations adopted pursuant to those two statutes.
4/9/86	DHS informs RWQCB that they believe Pond 1 had not contributed significantly to soil and ground water contamination based on a lack of confirming evidence.
4/29/86	DHS issues Notice of Violation and Directive to Comply to SCC for illegal disposal in response to March 25, 1986 inspection.

5/7/86	HEW&M requests justification and clarification for DHS' 4/29/86 Notice of Violation.
6/25/86	DHS conducts a sampling inspection of SCC for the purpose of identifying areas of illegal disposal per Notice of Violation dated 4/29/86, noting two additional violations to the California Health and Safety Code and Title 22, California Administrative Code.
7/6/86	SCC meets with RWQCB and DHS to discuss findings of on-site hydrogeologic investigations. SCC indicates off-site source for organic contamination.
8/19/86	SCC requests one month extension from DHS for revising Part A application.
11/6/86	DHS submits report and analytical results of 6/25/86 sampling inspection with notice to correct two additional violations noted during inspection. DHS issues Report of Violations verifying soil contamination at the facility and alleging that SCC was "operating an uncovered tank (Pond 3) without a permit from DHS."
1/7/87	DHS issues a Notice of Violation for non-compliance with state laws requiring liability coverage and financial guarantees for closure and post-closure costs.
4/87	L.A. County District Attorney's office files a criminal complaint against SCC and three individuals alleging various hazardous waste statutory violations.
7/87	DHS informs SCC that renewal of SCC's hazardous waste hauler's registration application will be deferred pending DHS analyses of the potential impact of criminal charges on that renewal; ultimately DHS issues temporary interim renewal, followed by full renewal of said registration.
7/15/87	EPA conducts RCRA Facility Assessment of SCC facility.
8/27-28/87	SCC and DHS sign Complaint for Administrative Penalties, Consent Agreement for Regulatory Compliance and Compliance Schedule. (Effective 8/28/87)
8/31/87	Milt Giorgetta of SCC is designated to direct and supervise the performance of required response work. Targhee Inc. is designated as consultant to perform the required response work.
9/10/87	SCC submits existing Waste Analysis Plan to DHS. Updated contingency plan submitted to DHS by SCC.

9/18/87	SCC submits draft flow diagram of wastewater treatment system at facility. SCC submits workplans to DHS for cleanup and removal of hazardous waste from Tank #3 and soil mound.
9/22/87	SCC submits list of personnel in hazardous waste management activities and their training programs.
	SCC submits all Biennial Reports to date to DHS.
9/23/87	SCC resubmits revised Tank #3 and soil mound remediation workplans as per DHS comments.
9/25/87	SCC submits timetable for remedial tasks as per Sections 3.1.10 and 3.1.11 of the Consent Agreement.
9/25/87	SCC submits workplan to DHS describing elements of closure and possible post-closure of Pond #1. Requests review for completion of closure and exemption from post-closure.
9/27/87•	SCC submits a Pond #1 work plan describing elements and costs of closure and post-closure.
9/87	DHS completes a CERCLA Preliminary Assessment (PA of SCC facility for EPA). Based on results of PA, EPA's Superfund Program refers site to RCRA Waste Programs Branch for follow-up.
10/6/87	DHS approves the Tank #3 and soil mound remediation workplans.
10/9/87	SCC submits draft inspection schedule to DHS.
	SCC submits updated Part A and description of all present and past practices for hazardous waste management and all closed units.
11/6/87	DHS approves work plans for remedial action for Tank #3 and soil mound area and incorporates them into the Consent Agreement.
11/24/87	SCC submits Form 8107: proof of financial responsibility for bodily injury and property damage to third parties.
	SCC requests an extension for closure assurance documentation (until 12/14/87) from DHS.
	SCC informs DHS that operating record of instruments, data and records, as specified in 22 CAC 67163, is available for inspection.
12/5/87	SCC submits plans to DHS for correcting alleged violations of 6/25/86 and for performing remedial action of the soil areas identified as being contaminated.

12/9/87	SCC completes the following tasks from "Workplan for Remedial Action for Soils Mound Area": (a) Demarcation of soil mound area (b) Removal of materials in soil mound area (c) Transport of removed material to Class I disposal facility
12/11/87	SCC submits first portion of financial assurances for closure and post-closure to DHS.
12/15/87	SCC submits written report to DHS upon completion of soil mound area remediation to DHS.
12/15/87	SCC submits report on remedial actions for the soil mound area certifying that the soil mound has been removed.
12/18/87	SCC submits alternative remediation plan for Tank #3 to DHS.
12/21/87	SCC submits upgraded employee training plan to DHS.
12/22/87	SCC submits remaining portion of financial assurances for closure and post-closure to DHS.
12/30/87	DHS returns a Notice of Deficiency to SCC regarding the closure plan and requests that comments be incorporated and the plan resubmitted for approval. After successful demurrer by SCC to 4/87 complaint, L.A. District Attorney's office refiles a criminal complaint against SCC alone, alleging one count of violation of the California Health and Safety Code by the unlawful disposal of zinc at an unauthorized location on SCC's premises. SCC enters a No Contest plea to the one count.
1/7/88	SCC resubmits amended Pond #1 closure plan.
1/88–7/88	SCC executes alternative remediation plan for the materials in Tank #3.
2/1–5/88	DHS conducts Annual Compliance Evaluation Inspection noting five potential violations to 40 CFR 265 and 40 CFR 270. Three violations are identified as being actively addressed under the DHS Consent Agreement while the remaining two raise additional response action requirements.
2/8/88	DHS completes a review of SCC's financial responsibility and issues a Report of Violation for noncompliance with state laws requiring liability coverage and financial guarantees for closure costs.
2/25/88	SCC submits lab analyses results for samples taken from disposal trucks during soil mound remediation in 11/87.

3/1/88	DHS issues Report of Violation in response to findings of February 1-5 Annual Compliance Evaluation Inspection.
3/9/88	DHS sends Report of Violation to SCC citing the facility for two violations of the California Code of Regulations, security and general operating requirements, calling for remedial actions.
3/16/88	DHS authorizes the implementation of the Revised Work Plan submitted for Remedial Actions for Tank #3.
3/23/88	SCC submits proposal to DHS for complying with requirements of 3/9/88 Report of Violation in regard to site security and high level alarms.
3/28/88	SCC submits explanation to DHS for delaying submission of closure and post-closure care financial assurance per 3/10/88 Report of Violation.
4/8/88	DHS conducts unannounced inspection of SCC facility.
4/12/88	DHS submits letter to SCC acknowledging apparent adequacy of proposed remedial measures for site security and announces follow-up investigation will be scheduled to assess their adequacy.
	DHS approves SCC proposals for security and spill prevention measures required by 3/9/88 Report of Violation.
4/19/88	DHS verbally agrees to postpone enforcement of 3/10/88 Report of Violation for closure and post-closure financial assurances in lieu of ongoing closure/post-closure plan development and review process.
6/17/88	DHS confirms that EPA is lead agency for any follow up work as a result of Comprehensive Monitoring Evaluation.
	SCC's attorneys inform EPA, that the RCRA Facility Assessment (RFA) contains certain factual inaccuracies.
6/88	SCC requests reapproval of use of original Tank #3 Remedial Workplan of 10/23/87.
6/29/88	SCC submits revised draft Closure/Post-Closure Plan for Pond #1.
7/?/88	SCC submits draft Closure/Post-Closure Plan of Pond #1, Appendix H, to DHS for review and approval.
7/7/88	Requested clarification is received by DHS from SCC regarding Tank #3 material removal methods.
7/11/88	DHS approves original Tank #3 workplan after clarification of 7/7/88.

7/14/88	DHS conducts follow-up inspection to February 1-5, 1988 Annual Compliance Evaluation Inspection noting three violations to Title 22, California Code of Regulations in the areas of security, general operating requirements and design and operation of the facility.
7/28/88	SCC submits copper processing modifications to DHS.
	SCC submits revised Part A to DHS: clarification of existing operations, proposed modifications, and proposed process expansions.
8/18/88	SCC formally notifies DHS that remedial activities have been completed regarding the removal of hazardous wastes and the rinsing of Tank 3.
8/22/88	EPA serves SCC with Consent Order (first Draft).
9/13/88	Targhee submits certification to SCC that Tank #3 rinse waters do not contain hazardous waste.
9/14/88	SCC submits documentation to DHS of performance and analytical results for Tank #3 Remedial Actions.
9/19/88	Final SCC proposed Part A revisions distributed.
9/23/88	DHS submits Report of Violations update to SCC stating that remedial responses to Reports of Violation issued in March of 1988 have failed to bring the facility into compliance.
	SCC's attorneys submit comments to EPA on Consent Order (first series).
9/30/88	DHS submits notice to SCC that Pond #1 closure plan is unacceptable. DHS approves modified Closure and Post-closure plan.
10/11/88	EPA submits draft Consent Order to SCC with first series of comments incorporated.
10/17/88	SCC advises DHS of plan to reconstruct ferric chloride process area; requests waiver of Part A revision.
10/18/88	SCC's attorneys submit comments to EPA on Consent Order (2nd series).
10/26/88	EPA submits draft Consent Order to SCC with 2nd series of comments incorporated.
10/28/88	SCC's attorneys submit Kleinfelder proposal for soil/ground water contamination investigation to EPA for revision of RFI estimates.

11/14/88	SCC submits detailed responses to DHS on Pond #1 Modified Closure Plan
12/5/88	DHS requests revised Part A application and written approval conditional to beginning reconstruction.
12/7/88	SCC requests 30-day extension for addressing DHS closure plan comments.
12/8/88	Official effective date of Consent Order.
12/15/88	SCC officially asks Milt Giorgetta to be project coordinator on consent work.
12/22/88	SCC informs EPA that Milt Giorgetta has accepted the position of project coordinator.
1/3/89	SCC selects Camp Dresser & McKee Inc. as consultant for RFI.
1/13/89	SCC addresses closure plan comments of DHS.
1/18/89	DHS cancels meeting scheduled for discussion of permitting and compliance issues, rescheduling for February 10.
1/24/89	SCC requests that DHS revise the wastewater treatment system variance to include Pond 3.
2/6/89	RWQCB informs CDM that the quarterly ground water sampling program is no longer an RWQCB-led program and that it is a matter for DHS and EPA to resolve.
2/10/89	SCC, HEW&M, CDM, EPA, DHS, and RWQCB meet to discuss RFI, Pond #1 closure, reconstruction of ferric chloride area, quarterly ground water sampling and tank certification status. Agencies agree to incorporate Pond #1 investigation and quarterly sampling into RFI and allow a 30-day extension to March 8, RFI deliverables due date.
2/23/89	SCC formally requests EPA to extend March 8 RFI deliverables due date 30 days.
2/24/89	HEW&M submit minutes of February 10 meeting to EPA, DHS, and RWQCB.
3/3/89	SCC submits proposals for modifications to Pond #1 investigation to DHS, EPA and RWQCB.
3/6/89	EPA gives verbal approval to request for 30-day extension to March 8 RFI deliverables due date.
3/6/89	HEW&M, on behalf of SCC, requests information on NPDES permitting from RWQCB.

4.3 Operational History

Manufacturing processes and waste management practices have changed quite frequently since SCC has operated the facility, resulting in changes of site layout and design over time. In certain locations, processing areas and individual waste managements units have been constructed over other inactive process areas and units due to space constraints and utility layout. In addition, certain waste management units, most notably the sumps, have undergone changes in waste sources, discharge points and unit designation. Figure 6 shows, based on available information, all of the solid and hazardous waste treatment, storage and disposal areas active before and up to November 19, 1980 (approximately). Figure 7 shows, based on available information, all of the solid and hazardous waste treatment, storage and disposal areas active from November 19, 1980 (approximately) to present.

Information on manufacturing processes prior to 1971 is relatively scarce. The facility, as Pacific Western Chemical, applied for a waste disposal permit for a ferric chloride manufacturing process in 1957. The facility also applied to the County Sanitation District for a waste discharge permit for chrome-bearing wastes in 1959. In 1961, operations reportedly included copper recovery, chrome recovery, zinc solution manufacturing, sodium aluminate manufacturing and a dry aluminum oxide trivalent chrome sacking operation.

Facility maps indicate that in 1971 the facility consisted of operations including a zinc sulfate process, and ferric chloride, alkaline and solder etchant manufacturing. As of 1977, operations reportedly included the same processes as in 1971, although in different areas, with the addition of a copper leaching area and acid and caustic etchant processes. Although the facility reported in 1978 that it was eliminating chromium-containing products from its manufacturing line, it did not do so until approximately October 1987.

Information regarding manufacturing processes in 1984 indicate that the following activities were occurring on-site:

- A patented ammonical etchant was being manufactured from a spent ammonia etchant containing copper and virgin chemicals.

- Copper oxide was being manufactured from spent ammonia etchants containing copper and raw copper chloride.

- Ferric chloride was being manufactured from iron, chlorine and hydrochloric acid, sold to chemical milling facilities, bought back, copper removed, and the ferric chloride regenerated and sold back to customers.

- Copper sulfate was being manufactured from the reaction of copper oxide and sulfuric acid, using spent etchants containing copper as a raw material.

- Spent chrome-sulfuric acid solutions were being reclaimed and sent back to customers.

All operations at the facility presently occur in tanks in outdoor process areas, with the exception of activities conducted in the mechanical maintenance shop, the laboratory, and the warehouse. Most of the plant site is paved except for an area at the southwest end of the facility between the ferric chloride area and the laboratory. This area had been paved since 1973 until the paving was partially removed in December 1988. The road dividing the facility was constructed in 1975. Other areas of the plant, including the western portion of the site were paved in 1980. The site has an outer containment curb along parts of the southern and northern boundaries. Evidence is conflicting as to whether the curb completely surrounds the site or not.

4.4 History of Wastewater Treatment System

The facility's wastewater treatment system has undergone constant change since it began operating in the late 1960s. There is incomplete information on this system prior to 1975. The units associated with the wastewater treatment system over time are listed below along with their respective dates of operation:

o Old wastewater treatment system	Late 1960s - early 1970s
o Pond No. 8	Prior to 1972-1974
o Pond No. 1	1975-1985
o Two 12,000 gal holding tanks	1976-1977
o Pond No. 2	After 1977-1982/83
o Treatment Tanks W-1, W-2	1985-present
o Filter press	1985-present
o Former three-stage clarifier	Early 1970s-1984
o New three-stage clarifier	1984-present
o Sump	1985-present

The first wastewater treatment system consisted of Tank 20, Sump 5, and Tank WW-1. Process wastewaters were collected and treated in this system prior to discharge to a municipal sanitary sewer connection. The second wastewater treatment system consisted of Pond No. 8, which began operating around the time the old wastewater treatment system became inactive, although it is unclear if all process wastewaters were discharged into Pond No. 1. Pond No. 1 was constructed over Pond No. 8 to serve as a treatment pond for process wastewaters prior to discharge to the sanitary sewer via the former three-stage clarifier and then to the sanitary sewer. The two 12,000 gallon tanks only operated for about one year when they were replaced by Pond No. 2, which was also used as a holding facility for wastewaters discharged into Pond No. 1.

Pond No. 1 was eventually replaced by the 30,000 gallon treatment tanks W-1 and W-2, which are currently active. Process wastewaters, drum and truck wash water, and routine plant cleanup wastes are discharged to these tanks. Treated effluent is routed directly to a new three-stage clarifier prior to discharge to the sanitary sewer. Precipitated solids and sludges are removed from the treatment tanks and routed through a filter press. Filtrate from the filter press is routed back to the wastewater treatment tank and is retreated. Filter cake is stored in drums prior to off-site disposal. The facility's industrial wastewater discharge permit is included as Appendix K.

4.5 Current and Proposed Hazardous Waste Treatment Processes

The current hazardous waste treatment processes utilized by SCC and proposed modifications are as follows:

Copper Chloride and Copper Ammonium Chloride Process Area (Existing)

Spent copper ammonium chloride etchant and spent cupric chloride etchant are brought to SCC by tank truck and in containers. This spent etchant is first pumped into hazardous waste storage tanks and then pumped into reactor vessels or product adjustment tanks. In the reactor vessels the waste is chemically treated, agitated and heated. In the product adjustment tank, the waste is adjusted with virgin material (ammonia, copper, and ammonium chloride) to attain production specifications for copper ammonium chloride.

Copper Chloride and Copper Ammonium Chloride Process Area (Modifications)

The proposed changes to the copper chloride and copper ammonium chloride process area are changes in the volume and number of storage and treatment tanks. All waste materials will be pumped from the storage tanks to the product adjustment tank, producing product grade material. This product grade material can then be further treated in non-regulated reactors to produce copper oxide.

Ferric Chloride Process Area (Existing)

Spent ferric chloride is brought to SCC by tank truck or containers and stored in hazardous waste storage tanks. The spent ferric chloride contains copper and other trace heavy metals. Batches of approximately 3,000 gallons are pumped into a reactor vessel which contains iron. As the spent ferric chloride is circulated over the iron, copper and the other heavy metals precipitate out as the iron is dissolved. Ferrous chloride is the resultant product which is sold to SCC's customers. Alternatively, the product ferrous chloride is chlorinated in the product manufacturing area to produce ferric chloride for sale. The precipitated copper and other metals are then sold to smelters.

Ferric Chloride Process Area (Modifications)

The proposed changes to the ferric chloride process area are changes in the configuration and number of storage and treatment tanks; no changes will be made in the waste treatment processes. The total hazardous waste storage and treatment capacity will not increase.

Copper Sulfate Process Area (Existing)

Spent copper sulfate plating and etching solutions are transported to SCC by tank trucks or in containers for hazardous waste storage in tanks. The wastes are treated in reactor tanks by the addition of sulfuric acid, copper oxide, and/or copper sulfate crystals (increase copper concentration). The resultant solution is agitated and pumped to product storage tanks for sale to SCC's customers.

Copper Sulfate Process Area (Modifications)

The only modification to the copper sulfate process area is the construction of additional waste storage capacity. No process changes will occur.

Metals Recovery Area (Existing)

Incoming waste acid and alkaline solution are transported to SCC in tank trucks or in containers. These wastes containing copper and zinc are processed in sumps and tanks. These wastes and process waters from the other treatment processes employed by SCC are precipitated with common alkalis, sodium sulfide and other appropriate agents. The resultant solution is then passed through a plate and frame filter press to recover the precipitated heavy metals prior to discharge of the filtrate to on-site wastewater treatment system and eventual discharge to the POTW.

Metals Recovery (Modifications)

The incoming wastes will be neutralized/treated in tanks prior to filtration and metals recovery. The filtered wastewater will then be transferred to the on-site wastewater treatment system. No chemical process changes will occur.

Cyanide Destruction (New)

The new waste treatment process will receive cyanide plating solution by tank trucks or in containers. The waste will be discharged to storage/ treatment tanks where the pH of the waste will be maintained >10 by the addition of waste or virgin alkaline material. The waste cyanide solution is then chlorinated, converting the cyanides to carbon dioxide and nitrogen gases. The resultant solution will then be treated in the metals treatment unit and the facility's waste water treatment unit to remove any heavy metals present prior to discharge to the POTW.

Transfer Station

Southern California Chemical maintains a hazardous waste container storage area where containers are stored prior to their treatment in the facility's processes. This area may also be used as a transfer facility, where containers may be stored for longer than 10 days prior to transportation to another off-site treatment facility. Containers may be transported off-site using flat bed trailers, or the containers contents may be pumped into bulk trailers or railroad rail cars for transportation to the designated treatment or recovery facility.

4.6 Hazardous Waste Storage

SCC receives wastes in a variety of containers, including drums, pails, bottles, 100 to 400 gallon tote bins and carboys of 5 to 55 gallon capacity.

The vast majority of wastes received by SCC are typically contained in plastic pails, drums and carboys. Wastes are only occasionally received in tote bins and glass bottles. The only wastes that may be delivered to the facility in mild steel containers and tote bins are alkaline and cyanide wastes and solid copper sulfate. On a rare occasion copper sulfate crystals may be received in 100 pound bags.

Upon arrival at the SCC facility, containers of hazardous waste are unloaded from the transportation vehicle and placed onto an asphaltic staging area (cyanide wastes would immediately be moved to the cyanide storage area to prevent incompatibilities with any acidic wastes in the staging area). Wastes remain in the staging area until all analytical protocols are competed. Typically, this is only for a few hours. Once the wastes are accepted by SCC the containers are moved to the container storage areas or pumped into storage tanks. (Cyanide wastes will have their own discrete storage cell to prevent incompatible storage with acidic wastes. This cell will be constructed upon granting of the RCRA Part B Permit.

Each drum of incoming waste material is labeled with a colored sticker corresponding to the waste type contained in the drum. Facility operators are trained in the recognition and application of these labels as a system for preventing improper commingling of incompatible wastes.

Container Storage Areas

The SCC facility has historically used two areas for the storage of hazardous wastes. These two areas (ERS and Spent) are depicted on Figure 2.

The basic design of the ERS container storage area is a concrete pad surrounded by a curb located in the south-central portion of the site. The container storage area's base and curbs are coated with an epoxy type paint, which is a corrosion resistant coating impervious to wastes.

The following list illustrates the containment capacity of the ERS Storage Area:

Container volume storage	4,750 gal.
24-hour, 25-year precipitation	17,800 gal.
Total required containment volume	22,550 gal.
Total existing containment volume	29,600 gal.

The Spent container storage area currently consists of a concrete curb and pad base located in the northern portion of the facility. The base and curb are coated with an epoxy type paint, which is a corrosive resistant coating, impervious to wastes.

The following list illustrates the containment capacity of the Spent container storage area:

10% container storage (maximum)	4,750 gal.
24-hour, 25-year precipitation	7,300 gal.
Total required containment volume	12,050 gal.
Total existing containment volume	12,800 gal.

All containers are stored on wooden pallets which elevate the containers above the base of the container storage areas, preventing contact of the containers with precipitation or spilled wastes. In addition, the facility's inspection schedule requires that all container areas be inspected on a weekly basis for spills or accumulated liquids. Movement of containers into and out of the storage area occurs many times a day, and all loading and unloading areas are inspected daily for spills. Due to this activity and required inspections, any accumulated liquids would be detected in a timely manner sampled, and analyzed at the on-site laboratory. Once the liquids are properly identified, the liquids can be removed via air-driven diaphragm pumps or a vacuum truck to the appropriate storage or treatment tank.

Aboveground Tank Containment

The majority of the facility is comprised of aboveground storage, process and treatment tank clusters situated in a number of containment structures. These structures are similar in design, consisting of a base and sidewalls. Most of the structures are of concrete construction. Some of the structures are coated with epoxy or fiberglass resin to increase the impervious character of the structures. Several of the containment structures are of less impervious design or are showing signs of deterioration. SCC is in the process of improving some of these containment areas. These include the copper sulfate and copper oxide containment areas. SCC has also submitted plans to the DOH for improvement of the ferric chloride containment area.

Per the Consent Agreement with the California Department of Health Services, SCC is required to upgrade and repair the storage and treatment tanks containment systems. As a part of the overall facility upgrading, the containment systems in use have been evaluated by a professional engineer for capacity and suitability of use. Those containment systems requiring repair are being upgraded.

All containment systems not meeting the requirements of the regulations are being retrofitted according to the following timetable:

- o July 1, 1989 - First half of all systems requiring upgrading.
- o December 1, 1989 - All hazardous waste treatment or storage tanks.

Upgraded containment systems and all new containment systems (e.g., cyanide destruct system) will be constructed of concrete, with a base free of cracks, and will be coated with fiberglass resin which is impervious to the wastes treated or stored in the tanks.

The designs of the containment systems consist of the tanks being placed on raised portions of coated concrete bases and surrounded by coated concrete walls. All precipitation and any spillage are contained within these structures. The placement of the tanks on a raised pad creates a "gutter" around each tank.

During the discharge or treatment of wastes in the tanks, any spills, leakage, or precipitation would be detected by the unit's operator. Additionally, the daily facility inspection would detect any accumulated liquids. In addition, the containment systems for all new and replacement tanks are designed to contain the precipitation from a 24-hour, 25-year storm plus 100 percent of the volume of the largest tank or 10 percent of the volume of tanks whichever is greater.

4.7 Hazardous Waste Handling

The waste handling equipment used by SCC is mainly the equipment used to handle containers. The major waste handling equipment used to handle the containers at the SCC facility are a forklift and drum dolly. This equipment is used to move the containers to the storage area and from the storage area to the treatment area.

All containerized wastes are delivered by truck to the facility. The containers may or may not be on wooden pallets upon arrival. If the containers arrive at the facility without pallets, the drums are placed onto wooden pallets prior to being removed from the truck. This is performed manually by the use of a drum dolly. This drum dolly has a safety feature in the form of a clamp that is placed over the top of the drum securing the drum to the dolly. Once the drums are placed onto the pallets, a fork lift is used to remove the container to the staging area located next to the truck. The fork lifts in use at SCC all contain roll bars and cages to protect the operator in the event that a container falls off the pallet towards the forklift driver. All fork lifts are also equipped with back-up horns to alert area personnel.

After the containers are transported to the particular waste treatment area, the containers are emptied by the use of hoses and air-driven diaphragm pumps. The design of the pumps incorporates a backflow device built into the pump preventing the waste from backflowing into the drum or into the environment. The diaphragm pumps and hoses are constructed of polypropylene which offers excellent resistance to the wastes being pumped.

Once the drums have been emptied of waste, the drums are decontaminated using water hoses equipped with a spring-loaded valve that turns off the water when the handle is released. Typically, this washwater is pumped into the treatment or storage tank along with the waste. If excess water is not required by a process unit to meet product specifications, the drums with hazardous waste residues may be moved to the drum washing and equipment cleaning area for decontamination. Once the drums have been decontaminated (triple-rinsed), the containers' hazardous waste labels are removed. If the container is to be reused, the container is moved to the "new drum" storage area. If the drum is not to be reused, the drum is moved to the cutting area where it is destroyed using a standard circular saw equipped with a plastic cutting metal blade. The decontaminated, destroyed plastic containers are disposed of as municipal trash.

If the container contains solids (e.g., copper sulfate), the containers and pallet are placed upon a wooden platform alongside the top of the appropriate treatment tank. This wooden platform is painted with a resistant paint to prevent corrosion to the wood and contains handrails. The contents of the containers are manually removed from the drums by tipping the drums over and shoveling the solids into the tank for treatment. While the operator is on the platform shoveling the solids into the tank all normal safety precautions are observed at all times to prevent injury.

Copper sulfate crystals received in tote bins are pumped from the bins by the addition of water creating a pumpable slurry. Wastes received in glass bottles are simply poured into a clean drum and then pumped into the storage tanks.

SCC also accepts wastes in bulk. These wastes are typically delivered by tank trucks. Each truck is equipped with fire extinguishers and onboard pumps used to pump the waste into the storage tank. Polypropylene fittings and hoses are used to handle the waste as they present excellent corrosion resistance.

The transfer operations that occur at the facility consist of loading containers onto flat bed trucks for transportation to a licensed treatment or recovery facility. This operation is conducted using drum dollies and fork lifts previously described.

If the transfer operation involves the bulking of containers into a rail car, a vacuum truck is used to remove the containers' contents and to fill the railcar. The empty drums are then moved to the drum washing area for decontamination.

If bulk wastes are received by railcar, the rail cars' contents are removed using vacuum trucks for placement into the proper storage tank.

The SCC facility also has available eight 5,000 gallon vacuum trucks. These trucks are used to transport wastes to SCC for recycling or recovery and for transfer operations. After discharging the waste material into the proper storage tank, if required, the vacuum truck would be available to service rail cars or to vacuum up any accumulated liquids that may occur in the containment areas.

5.0 DISCHARGES AND RESPONSE ACTIONS

The SCC facility reportedly has a history of poor housekeeping practices. Past reports document accidental releases of product and/or waste materials in three principal categories: (1) general discharges from processes and leaking tanks and drums, (2) releases to a railroad right-of-way, and (3) releases from sanitary and storm sewer systems. The following three sections describe, in chronological order, these categories of known releases and regulatory assessments of suspected releases. Approximate locations of these releases are shown on Figure 8. These locations can be referenced to Figure 8 using the location letter assigned to each paragraph.

5.1 General Discharges

Notice of Violation for Discharge - 8/59
to Road Entrance (Location A)

The L.A. County Engineer's office issued an inspector's report and Notice of Violation to SCC for dumping hexavalent chromium to the ground on-site along the road entrance and on adjacent properties.

No data are available to determine the volume, extent, duration or exact location of this reported release. It is not known what remedial actions, if any, were enacted in response.

Inspector's Report of Discharge - 2/24/64
to Ground and Service Road (Location B)

The L.A. County Engineer's office issued an inspector's report indicating that a highly caustic waste had been spilled to the ground and that an acid waste was being used as a dust control on the site service road (entrance road).

No data are available to determine the volume, extent, duration or exact location of this reported release. It is not known what remedial actions, if any, were enacted in response.

Notice of Violation and Order to Comply for - 4/7/76
Discharges to Bermed Pit and Drain-Ditch (Location C)

A Notice of Violation and Order to Comply were issued instructing SCC to immediately cease and desist from depositing sludge from the "final discharge settling pond to the bermed pit" on the property and to remove it to a legal point of discharge. In addition, SCC was instructed to immediately remove wastewater and contaminated dirt from the storm drain-ditch parallel to the railroad right of way to a legal point of discharge.

Although it is presumed that the "bermed pit" refers to the former drying ponds area, no data are available to determine the volume, extent, chemical constituents or exact locations of sludge disposal. This area was at least partially remediated when materials were excavated after the decommissioning of the ponds prior to the reconstruction of rainwater holding tank #3.

No data are available to determine the volume, extent, duration, chemical constituents or exact location within the drain-ditch of the reported release to this area. It is not known what remedial actions, if any, were enacted in response to the agency instructions.

Clean-up and Abatement Order (Location D - unknown locations) 8/8/78

RWQCB issued a clean-up and abatement order to SCC indicating that:

- On or before May 21, 1976, waste liquids containing acids, neutralizers, solvents, various salts of copper, zinc, iron, and/or chromium, and other similar materials, had been intentionally or negligently discharged at various locations of and adjacent to the facility in such a manner as to cause saturation of the soil.

- Dry inorganic chemicals and/or metallic zinc powder had been intentionally or negligently deposited at various locations at the facility where storm run-off could come in contact with them.

No data are available to determine the volume, extent, location or duration of these reported releases. No analytical data are available to determine the chemical character of the materials allegedly released. It is important to note that SCC does not have a history of using organic solvents at the facility.

DHS Inspection Report, Notice of Violation - 5/10/84
and Directive to Comply (Location E - unknown locations)

DHS issued a Notice of Violation and Directive to Comply identifying various regulatory violations including the "disposal of hazardous waste at an unauthorized facility or point, to wit: spills and general contamination on and off-site." SCC was directed to initiate a comprehensive clean-up of on-site and off-site contamination of hazardous waste. No data are available to determine or verify the dates, locations, volumes, nature, extent or duration of these reported releases.

DHS, L.A. County District Attorney's Office, - 8/10/84
Sanitation District and Engineer's Office Investigation (Location F)

DHS, L.A. County District Attorney's Office, Sanitation District and Engineer's Office conducted an investigation, pursuant to a search warrant, to inspect the facility and to look for any violations of the Hazardous Waste Control Law. According to a Supplemental Report prepared by Keith Cambridge, "several discharges were observed on and off-site." A general opinion was expressed that "many areas had discharges as a [result] of poor housekeeping, leaking containers or leaking drums." A blue plastic 55-gallon container with "blue-green soil" was noted as having "fallen from the storage location and spilt its contents to the neighboring property."

The Departments collected 15 samples from various on-site and off-site locations and media which were mixed and split with SCC for mutual analyses. The samples were analyzed for pH, cadmium, chromium, copper, nickel, lead and zinc. Analytical results from the Supplemental Report are included in Appendix A.

In a 11/21/84 letter to DHS, SCC outlined its remedial response actions performed to address the 15 areas of surface and shallow contamination observed and tested. The majority of actions entailed surficial and shallow excavation removal of contaminated soils to depths wherein all visibly stained soils were removed.

EPA Hazardous Waste Inspection - 1/30/86

Production Area (Location G)

According to the report of an EPA Hazardous Waste Inspection, "a copper sulfate production tank (next to tank J-4) had leaked or failed and blue liquid blanketed the bermed area." In addition, the EPA inspection report noted "copper sulfate discoloration could also be seen on tank walls, outside the bermed area and crossing the facility roadway to the drum rinse area." The inspection report stated that the contents of the main sump (5A/5B) were "also blue" and that "collection sump wastes are processed through the wastewater treatment unit." The drum and truck washing area is served by the In Road Collection Sump (HWMU 4:45) whose contents are routed to Sump 5-A with eventual routing, as noted in the EPA inspection report, through the wastewater treatment system. The noted existence of blue liquid within Sump 5-A shows that the In Road Collection sump and wastewater treatment system design was operating properly at the time of the release and, by evidence, contained the release within the confines of the SCC facility. No discharged liquids were reported by EPA to have been released to off-site areas.

EPA Hazardous Work Inspection 1/30/86

Plant Perimeter (Location H)

According to the EPA Hazardous Waste Inspection Report, "discolored soils and stained rail-bed gravel were found outside the plant perimeter fence." Facility owner King reportedly "identified the discoloration as a recurring problem from historical spills of ferric chloride (green) and ferrous chloride (brown). No data are available to document the dates, volume, or extent of either of these reported spills.

DHS Sampling Inspection - 6/25/86 (Location I)

On 11/6/86 DHS issued a report presenting the results of a sampling inspection conducted on 6/25/86 for the purpose of identifying areas of illegal disposal as outlined in a previous Notice of Violation dated 4/29/86. The Sampling Inspection Report outlined additional specific violations and required corrective actions. Several violations were release-related.

According to the sampling inspection report "...a greenish color liquid was observed coming from the rain water holding tank and running off to the off-site area just south of Pond #3." No estimates of volume, extent or duration of this reported release were given. Surface soils samples were collected in the vicinity of the release area but descriptions do not indicate whether the released substances or the area contacted by the released substances were directly sampled.

At the time the reported release was observed, the investigation reports observing nearby "...railroad tank car which appeared to be loading or off-loading chemicals." Reportedly, "...soil color was brown with white unidentified substance spilled on top of soil."

Wastewater Treatment Filter Press - 1986 (Location J)

According to the RFA, a 1986 DHS inspection indicated that spillage had occurred in the area of the wastewater treatment filter press. Although some liquids were present in the filter press catchment trough, at the time of the RFA visual site inspection (VSI), "no indications of spillage outside of the trough were observed."

The RFA concluded that the spillage observed in 1986 was not expected to drain off-site due to the location of the unit with the plant borders and the presence of a berm along the west side of the facility. In addition, it was concluded that due to the configuration of the filter press catchment trough and the concrete pavement surrounding the unit, there was low potential for releases to soil, ground water, or surface water.

Ferric Chloride Area Filter Press Sump (Sump 10) - 1986 (Location K)

According to the RFA, Sump 10 was observed "overflowing with a greenish-yellow liquid" at the time of the VSI. There was no indication as the volume, extent and direction of this "overflow" nor any identification of the compounds contained in the liquid.

No available data indicate the singular or repetitive occurrence of this "overflow," nor does any data indicate remedial responses to any incidents involving Sump 10.

Release of Ammonia Vapor (Location L)

SCC has been cited for releases of ammonia vapors to the atmosphere on several occasions. Of particular note is an incident which reportedly involved the dispersion of an "ammonia gas cloud" which reportedly extended for approximately two miles in a southwesterly direction.

SCC received several orders and notices of violation requiring installation of a comprehensive and effective ammonia vapor detection and alarm system. A system was installed and SCC presently performs 24-hour real-time monitoring of air quality in response to these requirements.

SCC Report of On-Site Incident - 2/17/88 (Location M)

According to a 2/22/88 letter to DHS, at 2:40 p.m. on February 17, 1988, a discharge pipe fitting on Tank C-8 containing waste cupric chloride was accidentally damaged causing approximately 3,500 gallons of waste cupric chloride to be spilled into the tank's secondary containment area. All materials were contained within the secondary containment structure.

Milt Giorgetta, plant manager and primary emergency coordinator was notified immediately of the spill. The spilled liquid was pumped into an on-site SCC vacuum tank truck where it was safely stored until repairs could be made to the damaged pipe fitting on Tank C-8.

The spilled liquid was completely pumped from the containment area into the vacuum tank truck by 4:30 p.m. The repair to the broken pipe fitting was made by SCC maintenance personnel with the assistance of SCC's plant engineer and plant manager. The repair was completed by 6:00 p.m. After the repair was made, the spilled material was returned to Tank C-8 from the vacuum truck. This was completed by 7:00 p.m. The secondary containment area was rinsed with water, and approximately 500 gallons of rinsate was pumped into Tank C-8. This was completed by 8:00 p.m.

There were no injuries resulting from this spill. It was determined that there was no actual or potential off-site migration or discharge into the sanitary sewer of hazardous waste as a result of this spill.

DHS Inspection - 7/14/88

Drum Storage Area Northeast of Pond 3 (Location N)

According to the report from a DHS inspection, the paving of the drum storage area northeast of Pond 3 had "become covered with a yellow-brown residue, as if iron chloride or similar wastes had been spilled there, and no attempt had been made to clean-up the spilled wastes." No data are available to document the volume or extent of this reported spill, nor the duration of time between release and remediation. It is important to note that this reported spill occurred within a hazardous materials storage area designed for containing such releases.

5.2 Discharges to Railroad Right of Way

DHS Annual Compliance Evaluation Inspection - 2/1-5/88

Complaint of Discharge to Railroad Tracks - 1966 (Location O)

The L.A. County Engineer's records indicate that SCC received a Complaint of Discharge to the railroad tracks. No data are available to determine the volume, extent, duration, chemical constituents, or exact location of this reported release. It is not known from whence the complaint was initiated.

Compliant of Discharge to Railroad Right of Way - 4/22/68 (Location P)

The Industrial Waste Division registered a complaint against SCC indicating that wastes were being discharged to the railroad right of way adjacent to the site and that such waste discharges had been noted for two years. SCC reportedly claimed that the discharge was from a broken freshwater line, indicating that it was repaired immediately.

No data are available to determine the volume, extent, duration, chemical constituents or exact location of these reported releases.

Inspector's Report of Discharge to Railroad Right of Way - 11/15/68 (Location Q)

An L.A. County Engineers inspector's memorandum was issued noting visible evidence of wastewater discharge to the ground. Runoff was noted as discharging to the railroad right of way and into an adjacent field where it reportedly percolated into the ground.

No data are available to determine the volume, extent, duration, chemical constituents or exact location of these reported releases. It is not known what remedial actions, if any, were enacted in response.

Inspector's Report of Discharge to Railroad Right of Way - 9/22/69 (Location R)

An L.A. County Engineer's inspector's memorandum was issued indicating that runoff was continuing to be discharged to the railroad right of way.

No data are available to determine the volume, extent, duration, chemical constituents or exact location of these reported releases. It is not known what remedial actions, if any, were enacted in response.

Spillage of Industrial Waste Water - 6/5/75
to Railroad Right of Way (Location S)

An inspector's report was issued noting "spillage of industrial wastewater discharge onto the Southern Pacific Railroad right of way." A Violation and Order to Comply was reportedly issued. No information was given as to estimates of the volume, extent, duration, chemical constituents or exact location of this reported release. It is not known what remedial actions, if any, were enacted in response.

Copper Cement Drying Pond #7 - 12/30/77 (Location T)

On December 30, a violation was issued for contaminated stormwater run-off. According to the RFA, heavy rains in late 1977 caused Pond 7 to overflow into unspecified areas of the plant property. The pond contents were then reportedly discharged into a drainage ditch and railroad right-of-way on the south end of the property.

Soil sampling was conducted in July 1978, in an area south of the pond, during the construction period of Pond #3. Samples were collected directly adjacent to the south side of the pond and in the drainage ditch. Zinc, copper and nickel were detected in these samples.

No other available data indicate whether any remedial measures were enacted.

Violation Cease and Desist Order for - 1/3/78
Discharge to Railroad Right of Way (Location U)

The RWQCB issued a Violation Cease and Desist Order to SCC for discharging wastes from the holding pond into the railroad right of way indicating that wastes flowed to the drainage ditch with discharge being facilitated via the use of two hoses siphoning the pond.

No data are available to determine the volume, extent, duration, chemical constituents or exact location of this reported discharge. A misdemeanor complaint was filed and tried resulting in SCC being found guilty and fined

$200. It is not known what remedial actions, if any, were enacted in response to either the initial Violation Cease and Desist Order or the resultant misdemeanor conviction.

Dumping/Spillage Along Railroad Right of Way - 1/7/81 (Location V)

A DHS report of field reconnaissance findings reported the presence of "some dumping/spillage along railroad right of way." No information was given as to estimates of the volume, extent, duration, chemical constituents or exact location of this reported release. It is not known what remedial actions, if any, were enacted in response.

Ferric Chloride Area (Location W)

According to the inspection report of a DHS Annual Compliance Evaluation Inspection, "at one point along the railroad tracks on the south side, there was a cut several inches wide through the containment curbing, and signs that water or wastes had flowed through the cut on to the track area." No data are available to document or verify the dates, volume or extent of this reported release or releases.

5.3 Industrial Wastewater Sewer Discharges

Industrial Waste Overflow - 7/16/78 (Location X)

A failure of the wastewater treatment discharge system caused an overflow of industrial wastes from the public sewer system in the area east of Norwalk Boulevard and south of Slauson Avenue, including Palley Supply Company, the railroad right of way and the storm drain system at Burke Street. SCC was issued a Notice of Violation and Order to Comply for allowing the continued existence of the waste materials "creating a public nuisance, a menace to public health and safety, damage to the public streets and private property and may pollute underground or surface waters." No data are available to ascertain the volume, extent, duration, or discharge point of the spill. Likewise, no data are available to determine the chemical character of the materials released.

Industrial Waste Discharge (Location Y) 10/19/84

The failure of a pipe joint in the sewer line leading from the wastewater treatment system caused a discharge of approximately 500 gallons of industrial wastewater, reportedly identified as ammonium dioxide. An unknown percentage of the discharge percolated into the subsurface soils in the discharge area. A vacuum truck was used to remove the wastewater that remained above the ground. Workers from SCC dug down to the damaged pipe to make repairs, after which an inspection of the entire line was conducted.

6.0 NATURE AND EXTENT OF CONTAMINATION

The following sections describe the existing information on the nature and extent of contamination of the SCC facility. These descriptions are designed to be as concise and extensive as the data allow. Where data is less extensive and discussions more broad in nature, the descriptions are meant to serve as a basis of understanding for developing future data needs and assessing the general character of contamination as well as possible.

6.1 Environmental Sampling and Analysis

Releases of some hazardous wastes and hazardous constituents at the SCC facility have occurred and contaminants have been detected in samples of groundwater and soils. Analyses have been performed to detect a number of hazardous constituents, primarily heavy metals, PCBs, chlorides, nitrates, and volatile organic compounds. In addition, pH, total organic carbon (TOC), total halogenated organics (TOX) and specific conductivity have been tested.

6.2 Soil Contamination

Surficial and subsurface soils have been sampled for analysis in various areas of the facility through the course of nine investigations. These include the Environmental Monitoring Study and Hydrogeologic Assessment of Pond Number 1 conducted by J.H. Kleinfelder in 1985, site inspections conducted by DHS on August 10, 1984, and June 25, 1986, analyses of excavated soils manifested for disposal in November 1987, an assessment of the ferric chloride area conducted by J.H. Kleinfelder in September 1988, analyses of the fuel tank excavation site conducted by Toxguard Systems, Inc., on July 14, 1989 during the tank removals, and DHS inspections in the proposed ferric chloride rehabilitation area on December 14, 1989 and March 14, 1990. Each of these investigations is described in Section 7.0 and respective soil data from each are included in a summary table in Appendix A (see Table A-1).

Soils have been analyzed primarily for pH, cadmium, chromium, copper, zinc, nickel, chloride, sulfate, ammonia nitrogen and carbonate. Fuel tank excavation samples were analyzed for total petroleum hydrocarbons and BTEX, and DHS inspection samples in 1989 and 1990 were analylzed for PCBs. The assessment of the ferric chloride area also included analyses for antimony, arsenic, beryllium, lead, mercury, selenium, silver and thallium. Analyses have been performed by various laboratories under subcontract to SCC and DHS.

No assurances are made herein as to the validity, accuracy or equivalency of the data sets. The intent of this section is merely to present a qualified assessment of the known subsurface areas exhibiting contamination, and to indicate a relative level, nature and extent of the contamination. The following paragraphs discuss, by constituent, the nature and extent of soil contamination at the facility. A summary of soil and miscellaneous facilities analysis data is included in Appendix A-1. The average analysis values given in the following sections were developed from this summary. Soil sample locations can be ascertained by referencing the appropriate appendix as noted at the end of the summary table. Locations of surface area and direct chemical compound samples by DHS can be ascertained by referencing the location descriptions in the Supplemental Report by Keith Cambridge, also included in Appendix A.

6.2.1 Inorganic Compounds

pH

Values for pH in facility soils range from 3.1, at 30-foot depth in borehole B-2, to 8.7 at 5-foot depth in borehole B-5. Based on the available data, average pH values were 6.98 for samples collected in monitoring well boreholes, 5.23 for soil borings conducted in the area of Pond #1 and the old underground storage tank, and 5.86 for various surface areas and chemical compounds sampled during DHS site inspections.

Cadmium

Cadmium levels in facility samples range from Not Detected at <0.5 mg/kg between the evaporation pond and railroad tracks at the south side of the facility and 240 mg/kg inside the former zinc storage area, both samples collected during DHS site inspections. Based on the available data, average values for cadmium were 1.60 mg/kg for samples collected in monitoring well boreholes (based on 3 samples), 2.0 mg/kg for soil borings conducted in the area of Pond #1 and the former underground storage tank (based on 7 samples), 1.06 mg/kg for soil borings conducted in the ferric chloride process area (based on 16 samples), and 33.62 mg/kg for various surface areas and chemical compounds sampled during DHS site inspections (based on 58 samples).

Chromium

Chromium analyses of soils has consisted of total chromium only; no analysis for hexavalent chromium has been conducted for soils to date. Total chromium values in facility samples range from Not Detected at 2.0 mg/kg in gravel near the railroad tracks south of the facility, to 16,000 mg/kg at 10-foot depth in borehole B-4. Based on the available data, average values of total chromium were 19.9 mg/kg for samples collected in monitoring well boreholes (based on 23 samples), 2,211.75 mg/kg for soil borings conducted in the area of Pond #1 and the former underground storage tank (based on 20 samples), 261.34 mg/kg for soil borings conducted in the ferric chloride process area (based on 16 samples), and 1642.22 mg/kg for various surface areas and chemical compounds sampled during DHS site inspections (based on 58 samples).

Copper

Copper levels in facility samples range from 9.42 mg/kg at 10-foot depth in borehole B-11 to 390,000 mg/kg in copper oxide cement sampled from a spilled drum along the northern border of the site. It is important to note that the latter material was cleaned up, redrummed and eventually sold. Based on the available data, average values of copper were 167.30

mg/kg for samples collected in monitoring well boreholes (based on 23 samples), 1,236.95 mg/kg for soil borings conducted in the area of Pond #1 and the former underground storage tank (based on 20 samples), 154.92 mg/kg for soil borings conducted in the ferric chloride process areas (based on 16 samples), and 30,746.97 mg/kg for various surface areas and compounds sampled during DHS site inspections (based on 58 samples).

Nickel

Nickel levels in facility samples range from Not Detected at 3.10 mg/kg at 25-foot depth in monitoring well borehole MW-8 to 4,960 mg/kg in "blue-green material" sampled at the surface in the former soil mound area. It is important to note that the latter material was cleaned up and manifested to a Class I landfill for disposal. Based on the available data, average values of nickel were 19.28 mg/kg for samples collected in monitoring well boreholes (based on 20 samples), 94.0 mg/kg for soil borings conducted in the area of Pond #1 and the former underground storage tank (based on 4 samples), 24.16 mg/kg for soil borings conducted in the ferric chloride process area (based on 16 samples), and 854.22 mg/kg for various surface areas and compounds sampled during site inspections (based on 58 samples).

Lead

Values for lead in facility samples range from 2.85 mg/kg at 10-foot depth in borehole B-9, to 37,000 mg/kg in soil sampled near the former soil mound area. It is important to note that the latter material was cleaned up and manifested to a Class I landfill for disposal. Based on the available data, average values for lead were 141.89 mg/kg for soil borings conducted in the ferric chloride process area (based on 16 samples), and 4,694.27 mg/kg for various surface areas and compounds sampled during site inspections (based on 58 samples). No analyses for lead were performed on samples collected in monitoring well boreholes nor in soil borings conducted in the area of Pond #1 and the former underground storage tank.

Zinc

Values for zinc in facility samples range from 13 mg/kg for a sample of ferro vanadium collected near the north property border to 116,666 mg/kg for a sample collected inside the bermed area of the former zinc storage area. It is important to note that the ferro vanadium was cleaned up and sold as product. Based on the available data, average values for zinc were 102.09 mg/kg for samples collected from monitoring well borings (based on 23 samples), 122.91 mg/kg for soil borings conducted in the area of Pond #1 and the former underground storage tank (based on 11 samples), 179.13 mg/kg for soil borings conducted in the ferric chloride process area (based on 16 samples), and 14,217.60 mg/kg for surface areas and compounds sampled during site inspections (based on 58 samples).

Chloride

Chloride levels at the facility range from 470 mg/kg at 25-foot depth in monitoring well borehole 10 to 5,100 mg/kg at 40-foot depth in borehole B-1. Based on the available data, average values for chloride were 1696 mg/kg for samples collected from monitoring well boreholes (based on 4 samples), and 2,750 mg/kg for soil borings conducted in the area of Pond #1 and the former underground storage tank (based on 8 samples).

Sulfate

Sulfate values at the facility range from 20 mg/kg at 40-foot depth in monitoring well borehole B-1 to 2,000 mg/kg at 15-foot depth in borehole B-6. Based on the available data, average values for sulfate were 65.75 mg/kg for samples collected from monitoring well boreholes (based on 4 samples) and 363.38 mg/kg for soil borings conducted in the area of Pond #1 and the former underground storage tank (based on 8 samples).

Ammonia Nitrogen

Ammonia nitrogen values at the facility range from 8.4 mg/kg at 15-foot depth in monitoring well borehole MW-9 to 500 mg/kg at 15-foot depth in borehole B-6. Based on the available data, average values for ammonia nitrogen were 28.35 mg/kg for samples collected from monitoring well boreholes and 82.63 mg/kg for soil borings conducted in the area of Pond #1 and the former underground storage tank.

Carbonate

Based on the select number of samples collected, results have shown Non-Detectable levels for all carbonate analyses (based on 10 samples). Sampling for carbonate occurred only in monitoring well boreholes and in soil borings conducted in the area of Pond #1 and the former underground storage tank.

Other Inorganic Substances

Analyses for antimony, arsenic, beryllium, mercury, selenium, silver and thallium show predominantly Non-Detectable levels for the soil borings conducted in the ferric chloride area, with minor exception.

6.2.2 Organic Compounds

PCBs

Surface soil PCB concentrations in the proposed ferric chloride relocation area ranged from 69 mg/kg in sample DHS-4, to 720 mg/kg in sample SCC-DM-002, using EPA Method 8080. The average PCB concentration for the eight samples from both investigations is 308 mg/kg.

Total Petroleum Hydrocarbons

Total petroleum hydrocarbon (TPH) values at the fuel tank excavation site ranged from 680 ppm at 1 foot below grade in sample 4-A, to 7,030 ppm at 2-4 feet below the surface of the gasoline tank bottom in sample 1-A, as determined by Modified EPA 8015. The average TPH value of the three samples collected from the gasoline tank area was 4,010 ppm, while the average of the three samples collected from the diesel storage tank excavation was 1,140 ppm. Using Standard Method 418.1, TPH values 2-4 feet below the surface of the diesel tank bottom ranged from 7,200 ppm in sample 2-B to 33,550 ppm in sample 2-A. The average TPH value of these two samples is 20,350 ppm.

Benzene

Benzene values for soil samples ranged from 0.165 ppm in sample 4-A to 53 ppm in sample 1-B. The average of the four samples analyzed for benzene was 18.6 ppm.

Toluene

Toluene values in the samples ranged from 0.53 ppm in sample 4-A to 228 ppm in sample 1-A. The average toluene value of four samples was 73.2 ppm.

Xylene

Xylene values ranged from 6.9 ppm in sample 4-B to 300 ppm in sample 1-A. The average value for the four samples was 88.4 ppm.

Ethylbenzene

The ethylbenzene values in the soil samples ranged from 0.86 ppm in sample 4-A to 135 ppm in sample 1-A. The average ethylbenzene value for the three samples was 58.3 ppm (ethylbenzene in sample 4-B was not detected).

6.3 Ground Water Contamination

Per RCRA requirements for detection and assessment monitoring, a program of routine sampling and analysis of on-site ground water has been in effect since February 1985. Data for all ground water analyses results to date are included in Appendix B.

Available laboratory analysis data for ground water samples indicate the presence of two primary contaminant plumes at the facility occurring in the Hollydale Aquifer. The plume constituents have been present at varying concentrations and lateral extent over time. One plume consists primarily of inorganic compounds and appears to be generally aligned in a north-easterly direction in the vicinity of MW-04 and MW-09. A second plume, consisting of halogenated and non-halogenated organic compounds, appears to be migrating on-site from the north across the western two-thirds of the site. Halogenated compounds are not presently being used on-site, nor have they ever been used on-site in the past. The specific source of the halogenated organic compounds is not known, but is likely to be one or several sites located to the north.

As stated in Section 7.3 (page 12) of the Environmental Monitoring Study (Kleinfelder, June 1985), the shallow aquifers of the area have apparently been out of use for some time. According to the report, the Los Angeles County Flood Control District stopped compiling shallow aquifer data in 1975 because the wells were no longer in use. Also, Section 7.4 of the above referenced document notes that a relatively shallow (perforations starting at 150 feet) Santa Fe Springs Water District well approximately two miles to the south was taken out of service because of TCE contamination. As illustrated in the Contamination Plume Distribution Maps contained in Appendix J of this document, low levels of halogenated organics (less than 100 micrograms/liter) have consistently been detected in all on-site wells (including upgradient well MW1) during quarterly ground water sampling events (1986 through the present). Most recently, at a DHS sponsored community meeting (May 1, 1990) DHS staff noted that a regional TCE problem was well documented for Santa Fe Springs and the surrounding areas.

6.3.1 Inorganic Compounds

Ground water has been analyzed for the following inorganic compounds: Chromium (Total), Chromium (Hexavalent), Cadmium, Copper, Zinc, Chloride, Nitrate as N, and Nitrate as NO_3. The primary inorganic compounds detected in ground water at the site are hexavalent chromium, cadmium, and zinc.

Cadmium

Cadmium concentrations in ground water have ranged from Non-Detectable at 0.0002 mg/L to 0.92 mg/L from February 1985 to present. Cadmium has been detected in MW-4 only and never at levels greater than 1.0 mg/L. The average concentration for cadmium in MW-4 since initial detection sampling began is 0.2 mg/L.

Zinc

Zinc has been detected in every on-site monitoring well, but only at insignificant concentration levels. Zinc concentrations in ground water have ranged from Non-Detectable at 0.001 mg/L to 0.4 mg/L from February 1985 to the most recent quarterly sampling in January 1989.

Hexavalent Chromium (CrVI)

Hexavalent chromium has been detected in every on-site ground water monitoring well, but only at significant concentrations in MW-4 and MW-9. Concentrations in MW-4 have ranged from 33 to 500 mg/l from June 1985 to present. Concentrations in MW-9 have ranged from Non-Detectable at 0.003 mg/l to 1.5 mg/l over the same sampling period. The main presence of hexavalent chromium appears to be located in the vicinity of MW-4 in the upper zone of the Hollydale Aquifer. This conclusion is supported by the fact that hexavalent chromium has only recently been detected in the adjacent, deeper, MW-4A at a concentration of 0.01 mg/l. (QA/QC data from the most recent quarterly sampling are currently being reviewed to determine if this detection is valid.)

Total Chromium (CrT)

Similar to hexavalent chromium, total chromium has been present primarily in samples from MW-4 and MW-9. Concentrations in MW-4 have ranged from 61 mg/l to 550 mg/l from February 1985 to present. Concentrations in MW-9 have ranged from Non-Detectable at 0.033 mg/l to 2.75 mg/l over the same sampling period. J. H. Kleinfelder & Associates indicated in previous reports (February 1988, June 1988) that an apparent rise in total chromium concentrations was the result of a change in sample preparation prior to analysis. A modification of EPA method 3010, in which the samples were not mixed prior to analyses, was used for analyzing samples prior to February 1988. At that point, a change in laboratories was accompanied by a change in analytical procedure in which method 3010 was strictly followed, with samples well-mixed up to the point of the removal of the test volume. It is believed that higher total chromium values represent the affect of detecting suspended sediments. In May 1988, sampling procedures were modified to include field filtering of metals using a sterile 45-micron screen to eliminate the suspended sediments.

Other Inorganic Compounds

Ground water samples have shown nitrates, chloride, and manganese at levels exceeding Drinking Water Standards.

6.3.2 *Organic Compounds*

Organic compounds have been detected in the site ground water monitoring system since the initial round of detection monitoring sampling. Over time, a select number of compounds have been detected in various concentrations and with varying lateral extent. This contaminant behavior and the fact that SCC does not have a history of using organic compounds indicates that the compounds likely are migrating onto the site from an off-site source. The following organic compounds have been detected in ground water samples from February 1985 to September 1988:

Compound	Range
1,1-dichloroethane	ND 0.2 - 360 mg/l
1,1-dichloroethylene	ND 0.2 - 200 mg/l
1,2-dichloroethane	ND 0.2 - 270 mg/l
benzene	ND 2.5 - 20 mg/l
carbon tetrachloride	ND 0.2 - 120 mg/l
chloroform	ND 0.2 - 97 mg/l
ethylbenzene	ND 0.5 - 95,000 mg/l
tetrachloroethene	ND 0.5 - 7.0 mg/l
1,1,1-trichloroethane	ND 5.0 - 3.1 mg/l
trichloroethylene	ND 1.0 - 550 mg/l
toluene	ND 0.5 - 17,000 mg/l
xylene	ND 0.5 - 23,000 mg/l
methylene chloride	ND 0.2 - 140 mg/l

Sampling results for January 1989 quarterly sampling round are located in Appendix A.

Section 7

7.0 PREVIOUS INVESTIGATIONS

Soil and ground water sampling to date has been performed under a variety of investigations required by the DHS and RWQCB, as well as through a RCRA promulgated quarterly sampling program. Reports from these investigations and the present ground water monitoring system are discussed in the following sections.

7.1 RCRA Interim Status Ground Water Monitoring System

The 13 ground water monitoring wells presently installed on site were constructed as part of two investigative phases promulgated by RCRA Interim Status Facility ground water monitoring requirements Figure 2). The first phase involved the installation of seven monitoring wells in response to RCRA Detection Monitoring requirements. When contaminants were detected in ground water samples during the first round of quarterly detection sampling, an Assessment Monitoring Program was invoked per RCRA requirements. These requirements promulgated the second investigative phase and, per consultant recommendations, the installation of six additional monitoring wells.

The following paragraphs describe the present ground water monitoring system and the justification for well location placement.

Detection Monitoring System

During January 1985, seven ground water monitoring wells were installed for detection monitoring purposes (Figure 2). Table 7-1 lists the wells and information pertinent to their installation and construction.

Both MW-1 and MW-2 were installed as upgradient monitoring wells: MW-1 is located approximately 450 feet upgradient of the surface impoundment at the northeastern corner of the facility; MW-2 is located approximately 350 feet northeast of the surface impoundment along the northern boundary of the facility. MW-3 was installed to obtain water quality data near the location of sewer leaks which have occurred at the facility. MW-4 was placed immediately downgradient of Pond 1 to detect any leaks. MW-5 was installed as a downgradient well at the extreme southwest corner of the property adjacent to the facility laboratory. MW-6A was installed to obtain ground water quality data near the two copper-sulfate ponds. MW-6B was installed to determine the amount of chemical attenuation through the 15-foot clay zone separating the Gage Aquifer from the Hollydale Aquifer.

Assessment Monitoring System

During July 1985, six (6) ground water monitoring wells were installed for assessment monitoring purposes (Figure 2). Table 7-2 lists the wells and information pertinent to their installation and construction.

MW-11 is located approximately 200 feet north of the surface impoundment and approximately 150 feet west of the MW-2. This well is intended to serve as a background water quality well. MW-4A is a deep well located immediately downgradient of the surface impoundment installed in an effort to define the vertical extent of the contamination. MW-7 is located along the southern boundary of the facility, installed to determine whether off-site migration was occurring. MW-8 is located along the northern edge of the facility road between the production manager's office and the equipment and drum cleaning area. It was installed in an effort to define the horizontal extent of contamination near Pond #1 in relation to other possible sources of contamination, including nearby underground storage tanks. MW-9 and MW-10 are installed near the former underground waste acid storage tank located to the northeast of Pond #1.

7.2 Phase I Environmental Monitoring Study June 1985
J. H. Kleinfelder & Associates

A Phase I environmental monitoring study was conducted in response to the requests of RWQCB and DHS concerning monitoring of the "steel re-inforced concrete wastewater pond" (Pond #1) per RCRA interim status detection monitoring requirements. The scope of work, as completed, included the following:

- Drilling, sampling and logging seven soil test borings to a maximum depth of 90 feet

- Sampling and analyzing a total of twelve soil samples from the boreholes

- Completing all seven borings as groundwater monitoring wells

- Sampling and analyzing groundwater from six monitoring wells

- Evaluating the collected data

The following general conclusions were reached during the investigation:

1. A confined aquifer exists beneath the site with a potentiometric surface between approximately 42 to 47 feet below ground level.

2. The general direction of groundwater flow is to the south-southwest.

3. Relatively low permeability soils were encountered from the surface to approximately 10 feet below ground surface. A second low permeability zone was encountered at approximately 25 to 50 feet below ground surface.

4. Water quality of samples from Monitoring Wells 1, 2, 3, 5 and 6 contained constituents below the Primary Drinking Water Standards.

5. The water sample from Monitoring Well 4 exceeded the Drinking Water Standards for cadmium, chromium, nitrate, chloride, manganese, and specific conductance.

Upon the detection of RCRA-regulated substances in the soils and ground water, it was recommended in the report that a groundwater assessment monitoring program be implemented as required by 40 CFR 265.93(d)(2). Specifically recommended were:

1. Additional soil borings/monitoring wells to potentially identify the source of the contamination.

2. A description of the horizontal and vertical extent of the chemical compounds in the groundwater.

3. An evaluation of the shallow aquifer characteristics by a pumping test.

4. A determination of the stratigraphic thickness and continuity, as well as the permeability co-efficient of the upper aquiclude of the San Pedro Formation.

5. A determination of other sources of the chemicals in the groundwater (i.e., prior owners, neighboring industries, etc.).

6. The implementation of a groundwater extraction program, using an on-going "pilot extraction program" to aid its design.

Soil boring logs, well construction diagrams, and analytical data from the environmental monitoring program are included in Appendix B.

7.3 Hydrogeologic Assessment: Pond No. 1 June 1985
J.H. Kleinfelder & Associates

A hydrogeologic assessment (Phase II environmental monitoring study) was conducted in response to a request of DHS to determine if there had been any leakage of Pond #1, as evidenced by contamination of soil or ground water in the area of Pond #1 as well as to try and identify the location of the former waste acid underground storage tank. The scope of work, as completed, included the following:

- o Drilling, sampling and logging 11 soil test borings ranging in depth from 15 to 107 feet (9 vertical borings/2 slant borings),
- o Completing five of the borings as groundwater monitoring wells,
- o Sampling and analyzing a total of 59 soil samples from the boreholes,
- o Sampling and analyzing six ground water samples from five monitoring wells, and
- o Evaluating the collected data.

In addition to reaffirming conclusions 1 through 3 of the Phase I investigation, the following conclusions were reached during the investigation:

1. Based on the chemical data presented in the report, there was no evidence that leakage of Pond No. 1 had occurred.

2. The elevated levels of chrome and copper detected under the pond appeared to have been due to leakage from the old tank area.

3. Waste from the old tank area migrated vertically through the vadose zone to the base of the 30-foot sand and then laterally under the pond.

In response, the following recommendations were made:

1. Immediately implement groundwater extraction to remove high levels of chromium and organics in the vicinity of MW-4.

2. Promptly implement the pilot study to determine the optimum treatment procedure for possible (in situ) treatment of the soil in the old tank area.

Soil boring logs and well construction diagrams from the Hydrogeologic Assessment are included in Appendix C. Analytical data from the Hydrogeological Assessment are included in Appendix B.

As was expected, no underground storage tank was discovered during soil boring operations. This was consistent with reports that the tank had been removed some years previously. However, highly elevated levels of contaminants were detected to the northeast of Pond #1 in the suspected former location. These levels were significantly higher than levels detected under Pond #1, clearly indicating that Pond #1 was not the most significant source for subsurface contamination in that area. On April 9, 1986, DHS informed RWQCB that they believed Pond #1 was not a significant source of contamination, based on a lack of confirmatory evidence, and that any contamination under Pond #1 would be addressed under a more comprehensive remedial investigation of the entire site.

It is unclear why Pond #1 was never vindicated of its accusation of being the contaminant source in light of what the data showed. Apparently, the lack of documentation showing the existence, construction and location of the former tank was enough justification for proceeding with an assumption that the tank never existed. Recently, however, documents were discovered which show the location and construction of the tank, confirming its former existence. Figure 9 shows the original tank construction diagram. The former location of the tank is shown on Figure 6.

7.4 Environmental Assessment January 1986
J.H. Kleinfelder & Associates

An Environmental Assessment report was authored as a compilation of previous investigations conducted in response to the requests of the RWQCB and DHS concerning monitoring of Pond #1. Elevated levels of inorganic and organic compounds were detected in these previous investigations, prompting an expanded investigation to determine the vertical and horizontal extent of the contamination. The scope of field investigations for this report included the performance of an aquifer pumping test to evaluate the transmissivity, permeability and storage coefficient of the Hollydale aquifer. A step drawdown test was performed prior to the aquifer test to (1) determine the proper pumping rate for the test, (2) observe pumping rate/drawdown relationships, and (3) estimate specific capacities.

The step drawdown test was performed on August 19, 1985 using monitoring Well 9. The well was initially pumped for 60 minutes at a rate of 25 gpm exhibiting 8.9 feet of final drawdown and a specific capacity of 2.81 gpm/ft. A contiguous second test of 50 minutes at a rate of 35 gpm exhibited 125 feet of final drawdown and a specific capacity of 2.8 gpm/ft.

The aquifer pump test was conducted on August 29, 1985, again utilizing monitoring Well 9 for pumping. Monitoring Wells 4, 8 and 10 were utilized for monitoring drawdown in the area. The aquifer reportedly reached steady state after 4 hours and 10 minutes of pumping at an average rate of 25.4 gpm. The maximum length of time for recovery required 120 minutes as exhibited by monitoring Well 10. An average rate of pumping was calculated for the test because discharge decreased over time due to pump overheating and increasing head in the discharge storage tank.

The time-drawdown and recovery data from the monitoring wells were analyzed using Theis curve matching and Jacob-Cooper approximation. Calculated transmissivity values for the monitoring wells ranged from 32,057 to 44,694 gpd/ft with an average value of 40,000 gpd/ft. Transmissivity was not calculated for the pumping well due to data point scatter reportedly caused by pump turbulence. Calculated storage coefficient values ranged from 0.0061 to 0.010. No values for permeability were reported.

In addition to reiterating conclusions from previous investigations, the following general conclusions were reached:

1. Elevated levels of nitrates in (groundwater) appear to be migrating onto the site from the north.
2. Elevated levels of copper in the soil exist near MW-11.
3. Elevated levels of organic chemicals in (groundwater) exist beneath the site. The source of these chemicals are unknown.

In response, the following recommendations were made:

1. Mitigation of the contaminated soil and groundwater should commence immediately upon approval of the regulatory agencies. Prior to regulatory approval, a mitigation plan should be submitted which includes, at a minimum, the following:
   - Design of the optimum groundwater extraction system
   - Design of the optimum groundwater treatment system
   - Soil mitigation options
   - Sampling protocol and frequency
   - Projected time of completion

Concurrent with submittal of the mitigation plan, it was recommended that a pilot groundwater and soil treatment study should commence.

A discussion presented the pilot groundwater mitigation system as consisting of a low volume (10-70 gallon minimum) extraction well coupled to a water treatment system. The inorganic compounds were suggested would be treated by the existing wastewater treatment system and the organic compounds treated by use of a portable granular activated carbon unit. The suggested objectives of the pilot study were to determine if the organic compounds could be treated economically by carbon and to determine the extractability of the high levels of chrome in the vicinity of the extraction well. The suggested pilot system would consist of laboratory-packed column tests to determine leaching ability of different substances.

7.5 Unnamed Report of Soil Investigation September 1988
Ferric Chloride Process Expansion Area
J. H. Kleinfelder & Associates (Project 50-1014-03)

Seven soil borings were advanced into the subsurface in the ferric chloride area west of the present ferric chloride process facilities. Soil samples were collected at depths of 5 and 20 feet in each boring. Samples were analyzed for heavy metals, showing elevated levels of chromium, copper, lead, nickel, and zinc. Sampling locations and the results of sample analyses are included in Appendix E. These data are also included in the summary of soil and surficially collected chemical compound samples attached in Appendix A (see Table A-1).

7.6 Report of Soil Investigation December 16, 1987
Proposed Above-Ground Storage Tanks
J.H. Kleinfelder & Associates

A soil investigation (foundations study) was conducted to evaluate soil conditions underlying the site of five proposed above-ground storage tanks in the area west of the present ferric chloride process facilities and east of the laboratory. The investigation included field exploration and laboratory testing and was intended to develop recommendations and opinions concerning:

- Site preparation and grading,
- Concrete slabs-on-grade, and
- Foundation design criteria

No geologic, seismic or environmental assessments were performed for the site.

The scope of work, as completed, included drilling five exploratory borings to a maximum depth of 20 feet below ground surface. Materials encountered in the borings were visually classified in the field by an engineer, the logs and locations of which are included in Appendix F. Representative samples of materials encountered were obtained at various depths and submitted for laboratory testing to determine physical character and engineering properties. Samples were tested for dry unit weight, moisture content, shear strength parameters, expansion potential and gradation.

Soil borings indicated the presence of a buried concrete slab at a depth of approximately 12 inches. It is not known whether that slab was removed during recent demolition activities at the site in this area. Soils generally consisted of sandy silts to a depth of approximately 8 feet, silty sands to a depth of approximately 14 feet underlain by clean, medium-grained sand of undetermined thickness. No groundwater was encountered in any of the borings.

7.7 Geotechnical Engineering Investigation — November 19, 1985
Proposed Aboveground Masonry Rainwater Tank
J. H. Kleinfelder & Associates

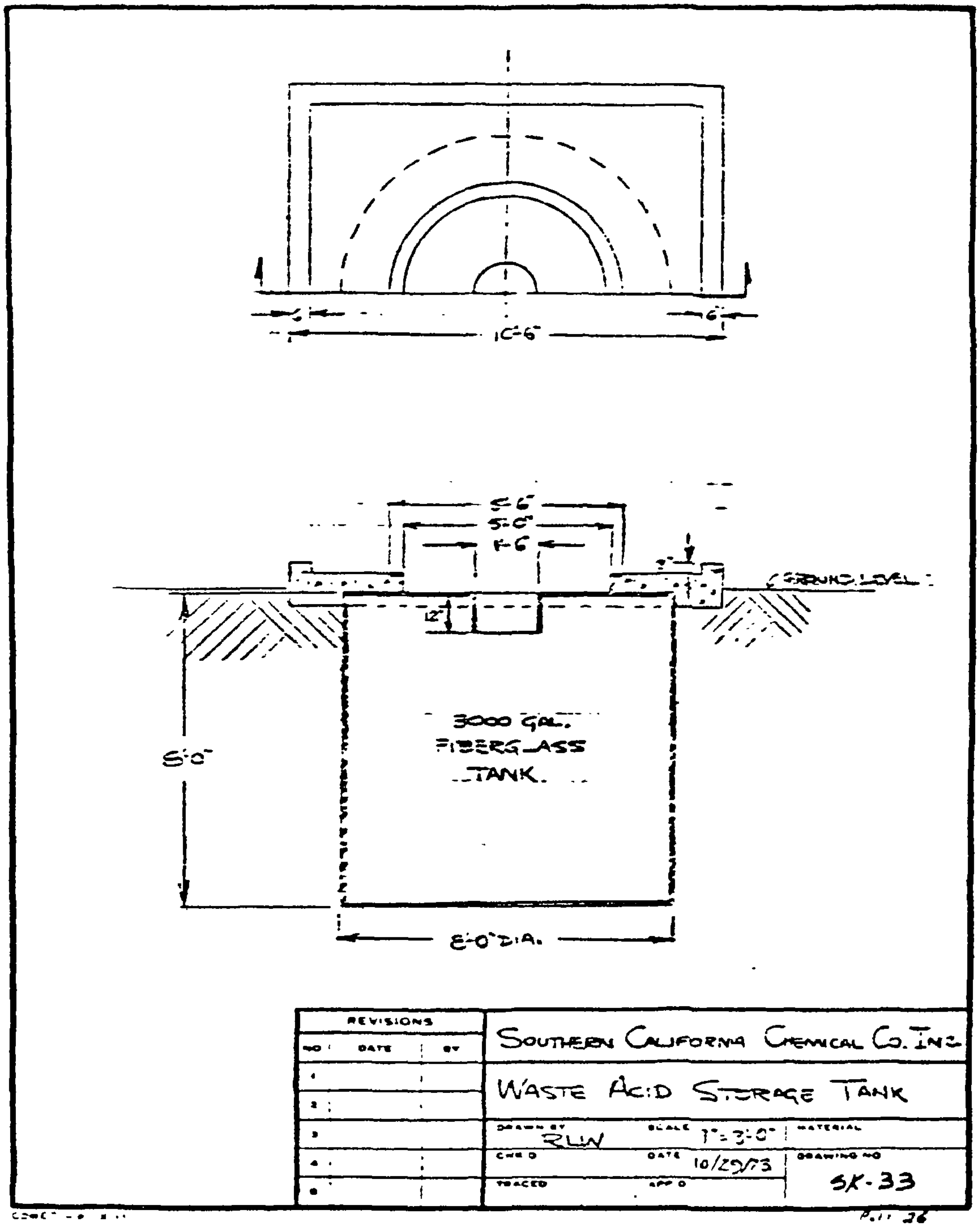
A soil investigation (foundation study) was conducted to evaluate subsurface soil conditions underlying the site of a proposed aboveground masonry rainwater tank in the area east of Pond No. 3. The investigation included field exploration and laboratory testing and was intended to develop recommendations and provide relevant geotechnical engineering parameters for use in project design and construction concerning:

- Site preparation
- Removal and recompaction
- Compacted engineered fill
- Shrinkage and subsistence
- Foundation design
- Slab-on grade
- Drainage
- Trench backfill

No geologic, seismic or environmental assessments were performed for the site.

The scope of work, as completed, included drilling two exploratory borings to a maximum depth of 30 feet below ground surface. Materials encountered in the borings were visually classified in the field by an engineer, the logs and locations of which are included in Appendix G. Representative subsurface samples were collected at regular intervals and submitted for laboratory testing to determine relevant geotechnical properties. Samples were subjected to moisture content and dry unit weight analysis, shear strength determinations, and consolidation tests.

Soil borings indicated relatively uniform subsurface conditions. A surficial layer of clayey silt occurred to a depth of approximately 5 feet. This material was underlain by a layer of silty clay extending to a depth of approximately 11 feet. A layer of fine sands generally extended from 11 feet to 27 feet and was underlain by a unit of clayey silt of undetermined thickness. No ground water was encountered in either of the borings.



Southern California Chemical
FILE DRAWING OF FORMER WASTE ACID UNDERGROUND STORAGE TANK

NOTE : DRAWING REDUCED
76 PERCENT

Camp Dresser & McKee CDM	Figure 9

TABLE 7-1

GROUNDWATER MONITORING WELLS INSTALLED IN JANUARY 1985
SOUTHERN CALIFORNIA CHEMICAL

Well Number	Drilling Period	Depth of Borehole (ft)	Depth of of Well (ft)	Screened Interval (ft)	Well Diameter (in)	Casing Elevation (ft)	Construction Materials	Formation Screened
MW-1	01/07-08/85	80.0	62.5	47-62.5	2	152.26	PVC	Aquitard/Hollydale
MW-2	01/10-18/85	95.0	74.0	44-74	2	151.56	PVC	Aquitard/Hollydale
MW-3	01/16-21/85	75.0	75.0	45-75	2	151.62	PVC	Aquitard/Hollydale
MW-4	01/16-22/85	75.0	75.0	45-75	2	149.76	PVC	Aquitard/Hollydale
MW-5	01/15-21/85	75.0	75.0	45-75	2	153.21	PVC	Aquitard/Hollydale
MW-6A	01/16-22/85	45.0	30.0	10-30	2	149.31	PVC	Gage/Aquitard
MW-6B	01/22-22/85	80.0	77.0	47-77	2	149.46	PVC	Aquitard/Hollydale

Based upon: Environmental Monitoring Study
Southern California Chemical
J.H. Kleinfelder, June 1985

TABLE 7-2

GROUNDWATER MONITORING WELLS INSTALLED IN JULY 1985
SOUTHERN CALIFORNIA CHEMICAL

Well Number	Drilling Period	Depth of Borehole (ft)	Depth of Well (ft)	Screened Interval (ft)	Well Diameter (in)	Casing Elevation (ft)	Construction Materials	Formation Screened
MW-4A	07/10-XX/85	110.0	107.0	87-107	4	152.49	PVC	Lower Hollydale/ Aquiclude
MW-7	07/08-XX/85	75.0	75.0	45-75	2	149.27	PVC	Aquiclude?/Hollydale
MW-8	07/12-XX/85	75.0	71.0	41-71	2	149.83	PVC	Aquiclude?/Hollydale
MW-9	07/10-XX/85	79.0	77.0	47-77	4	151.14	PVC	Aquiclude?/Hollydale
MW-10	07/10-XX/85	75.0	75.0	45-75	2	151.60	PVC	Aquiclude/Hollydale
MW-11	07/08-XX/85	76.5	75.0	55-75	2	152.80	PVC	Aquiclude/Hollydale

Based upon: Hydrogeologic Assessment - Pond Number 1
Southern California Chemical
J.H. Kleinfelder, July 1985

Section 8

8.0 CURRENT INVESTIGATIONS

The following sections describe all investigations which are currently being undertaken at the SCC facility, including the objectives, schedules of activities and type, and intended mitigative effects of corrective measures.

8.1 RCRA Facility Investigation (RFI)

Southern California Chemical Company is presently under an Administrative Order of Consent (Consent Order) per RCRA Section 3008(h) with the United States Environmental Protection Agency Region 9 (EPA). The effective date of the order is December 8, 1988. This Current Conditions Report is being prepared by directive of the Consent Order.

The objectives of activities required by the Consent Order are: (1) to perform a RCRA Facility Investigation (RFI) to determine fully the nature and extent of any release of hazardous waste and hazardous constituents at or from the facility; (2) to perform a Corrective Measure Study (CMS) to identify and evaluate alternatives for the corrective action necessary to prevent or mitigate any releases of hazardous wastes or hazardous constituents at or from the facility; and (3) to address the deficiencies noted in the Los Angeles Regional Water Quality Control Board June 3, 1988 report, "Comprehensive Ground Water Monitoring Evaluation of the Southern California Chemical Company" (from Consent Order).

At present the schedule of activities has been preset by the Consent Order and includes the critical path events listed in Table 8-1.

8.2 Development of RFA

The relative lack of historical documentation of changes to facility processes, manufacturing areas and waste management practices has lent itself to the development of somewhat erroneous assessments about the current status of the site. Of particular concern is the development of the RCRA Facility Assessment (RFA) which served as the base information

TABLE 8-1

RFI CONSENT ORDER CRITICAL PATH EVENTS

Event	Schedule
Submit RFI Work Plan	June 8, 1990
Submit Current Conditions Report	June 8, 1990
Submit Pre-investigation Evaluation of Corrective Measures Report	June 8, 1990
Resubmit RFI Work Plan	30 days after EPA review
Commence RFI Activities	14 days after RFI Work Plan approval
Submit Corrective Measures Study Work Plan	60 days after RFI report approval
Resubmit Corrective Measures Study Work Plan	30 days after EPA review
Corrective Measures Study	14 days after CMS Work Plan approval
Submit Corrective Measures Final Report	No schedule stipulated
Public Comment Period	30 days after CMS Final Report approval
Corrective Measure Implementation Negotiations	60 days after Corrective Measure Selection

document for the RFI Consent Order. SCC personnel reviewed the RFA at the time of its receipt and submitted a letter on 6/17/88 to Mr. James Breitlow, Section Chief, California Permitting, EPA Region IX, indicating that the RFA was believed to contain certain factual inaccuracies. The following items are those which have been identified as being factually inaccurate and should be considered when reviewing RFI Workplan deliverables and when consulting the RFA:

Page, Para. No.		Comment
p. 1	¶ 4	Construction over inactive process areas and units due to space constraints and utility layout.
p. 6	¶ 1	The status of ownership by CP Chemicals, Inc. needs to be updated to reflect 1984 purchase. Also, SCC is a division (not subsidiary of CP Chemicals, Inc.
p. 6	¶ 2	No zinc sulfate or any other product with zinc has been manufactured since approximately 1978.
p. 8-9	last ¶	Manufacture of chromium containing products did not cease until approximately October 1978.
p. 9	¶ 3	a. The drying ponds were paved (i.e., lined) with concrete or asphalt.
		b. The ponds were used to dry copper cement, not copper <u>oxide</u> cement.
p. 10-11	last ¶	a. Treated effluent is routed directly to a new three-stage clarifier prior to discharge to the sanitary sewer.
		b. Filtrate from the filter press is routed back to the wastewater treatment tank and is retreated.
p. 11	¶ 2	All appropriate air quality permits exist.
p. 12	Fig. 4	The RCRA-regulated drum storage area (Unit 4.20) was paved further to the right (to the point above "z" in "zinc sulfate) (see p. 57, ¶ 2).
p. 14	¶ 1	Facility occupies 4.8 acres.
	¶ 4	a. The nearest surface water to the facility is an unnamed drainage ditch bordering the south of the property which flows into the Sorenson Avenue Drain to the east. The Sorenson Drain merges with La Canada Leffingwell Creek forming La Canada Verde

Page, Para. No.		Comment
		Creek. La Canada Verde Creek coalesces with Coyote Creek approximately 5.2 miles to the southeast of the facility.
		b. All storm drainage is retained and treated on-site prior to discharge to the municipal POTW connection with the exception of drainage from the front parking lot and office areas which drains to the unnamed drainage ditch south of the facility.
p. 15	¶ 3	a. Ground water is encountered at the site in the Hollydale aquifer.
		b. Not all monitoring wells are screened at the same interval.
	¶ 4	Groundwater flows under the facility in the Hollydale aquifer.
	¶ 5	Thirteen monitoring wells have been installed at the site.
p. 17	¶ 1	Groundwater from monitoring wells 10 and 11 has shown detectable levels of organic compounds.
p. 19	¶ 3	Overflow volumes of water probably within NPDES discharge limits.
p. 21	¶ 1	a. Pond 3 dimensions are 35' x 70'.
		b. Pond 7 was used for drying copper cement.
	¶ 2	Pond 3 does not retain all rainwater, only that in excess of 1/10". All runoff of rainfalls less than 1/10" are routed directly through the wastewater treatment system.
	¶ 3	Pond 3 was used as a temporary wastewater treatment tank while WW1 and WW2 were being installed with proper air permits.
p. 22	¶ 3	Facility has been completely bermed except during periods of temporary construction.
	¶ 5	Pond 3 was cleaned out per DHS-approved plan and then relined with polyurethane.
p. 24	¶ 1	Pond 8 has never been a zinc pond nor has it ever received wastewater from zinc sulfate area.

Page, Para. No.		Comment
p. 25	¶ 3	The use of hydrogen peroxide, chlorine and perchloric acid as oxidizing agents needs to be reassessed for substantiation.
	¶ 4	a. The reference to oxidizing agents and sludge being routed through a filter press refers to present operations using tanks W-1 and W-2, not Pond 1. b. Filtrate is discharged to the Los Angeles County Sanitation District after pretreatment.
p. 26	¶ 1	Sludges removed from the "neutralization pit" were zinc production sludges. All sludges from Pond 1 went off-site. Pond 1 was used as a drying pond, not a disposal pond.
p. 29	¶ 2	The facility converted back to a batch operational mode in late 1976.
p. 31	¶ 2	Pond No. 2 became inoperational in 1985 along with Pond 1.
p. 33	¶ 2	Typographical error - 25,000 gallons.
p. 35	¶ 1	The concrete trough is fiberglass-lined.
	¶ 2	The filtrate collected in the trough is gravity-fed to a sump where it is pumped back to the wastewater treatment tanks (not to the sanitary sewer).
	¶ 6	Concrete trough is fiberglass-lined and collects dripping liquids as do all filter presses by design.
p. 35	¶ 3	The former 3-stage clarifier was taken out of service by at least 1976, possibly sooner. 1984 removal date is correct.
p. 38	¶ 2	Any releases would have remained on the facility. It is unlikely that any spill would be of a volume significant enough to be directly discharged to Coyote Creek which is located approximately 5.2 miles to the southeast of the facility.
p. 39	¶ 3	The new 3-stage clarifier was placed into service in 1985 reinstating a process which had been nonexistent since the decommissioning of the former 3-stage clarifier in approximately 1976.
p. 40	¶ 1	The new 3-stage clarifier is coated with polyurethane or epoxy paint and therefore the integrity of the tank is adequate for its use purposes.

Page, Para. No.		Comment
p. 45	¶ 1	Tank SC-1 is a 4,500-gallon tank and had no titanium lining.
	¶ 2	a. Tank wastes were routed to Pond 1 (not tanks W-1 and W-2) for mixing with other sludges for neutralization and metals precipitation prior to hauling to a Class I landfill.
		b. Sludges accumulating in Pond 1 were trucked off-site to an approved treatment facility in an aqueous state.
	¶ 3	Tank SC-1 was placed into service by 1976.
	¶ 4	Tank SC-1 was decontaminated and disposed in 1988.
	¶ 6	Tank SC-1 containment wall is 12' x 15 x 2' and is situated entirely above-grade.
p. 46	¶ 2	a. The tank was fiberglass and was not corroding.
		b. Dark sludgy material present on the floor of the concrete containment was due to minor operational spillage from the outlet pipe, not a constant leak.
		c. The concrete base was not titanium-lined.
p. 47	¶ 1	The "disposal pit" was used for drying zinc sulfate sludges, not permanent disposal.
p. 49	¶ 2	The subgrade concrete sump is fiberglass-lined.
p. 51	¶ 1	The "truck washing area" is no longer active in that capacity but has been an active rainwater collection area for approximately 2 years.
p. 51	¶ 3	Replace "active" with "inactive."
	¶ 6	The "few minor cracks" in the pavement are pre-existing expansion joints.
p. 53	¶ 3	a. The subgrade concrete sump was a lead-lined steel tank set in concrete.
		b. The tank was set 6" above grade and 3-4' below grade.
	¶ 3	The drum washing area is no longer active.
p. 56	¶ 1	Sump 10 is acid tile-lined concrete, not lead-lined steel.
	¶ 6	Ditto.

Page, Para. No.		Comment
p. 57	¶ 1	Drums stacked two high were empty. Presently, all drums, full or empty are stacked using pallettes.
	¶ 4	No drums of cuprous ammonia acetate existed. This compound was received only once as input via rail car in approximately 1983-1984.
p. 59	¶ 1	Drums stacked three high were empty. Presently all drums, full or empty, are stacked using pallets.
	¶ 3	Unit is not being used to store spent ferric chloride any more. Present use is for storing copper cement.
	¶ 7	a. Any spill would be on concrete and contained towards center of property to the north.
		b. Area was bordered by a wall, not uncurbed.
p. 61	¶ 3	Drum storage area #2 is no longer used to store nickel sulfate. Area is presently used to store finished product.
p. 63	¶ 1	a. Drums contained waste copper "ammonium" chloride solution.
		b. Drums stacked two high were empty. Presently all drums, empty or full, stacked using pallets.
	¶ 7-8	Same as p. 59, ¶ 7 a and b.
p. 65	¶ 1	a. Drum storage area #4 is located adjacent to the "copper" sulfate processing area.
		b. Drums stacked two high were empty. Presently all drums, empty or full, are stacked using pallets.
	¶ 6	Unsecured drum lids were on empty drums only.
p. 67	¶ 7	Drainage is north toward central facility road, not to south.
p. 76	¶ 1	a. Sump 1 is a catch basin which also collects drainage from Schnee Moorhead property.
		b. The dimensions of Sump 1 are 1' x 6' x 6'.
	¶ 3	Sump 1 became inactive in 1988.
p. 75	¶ 1	a. Sump 2 has been a catch basin since 1976 when it was modified to a smaller size during parking lot modifications.

Page, Para. No.		Comment
		b. Prior to modification, Sump 2 may at one time have discharged to the wastewater treatment system.
	¶ 2	The "former" sump became active in 1976.
	¶ 3	The sump became inactive in 1988 when it was partially concreted over and converted to a catch basin during parking lot modifications.
	¶ 4	Chemical analyses of sump wastes may never have been performed.
p. 76	¶ 1	Sump 3-C is functionally a catch basin, no pump exists. Prior to the building of the facility road drainage entering Sump 3-C was gravity-fed to Sumps 3-A and 3-B where it was pumped to Sumps 5(A,B,C). Since the building of the facility road, drainage entering Sumps 3-A and 3-B feed by gravity to Sump 3-C, where upon reaching a fixed spillway elevation, excess is gravity-fed to Sump 4 and then pumped to Rainwater Tank #3.
p. 77	¶ 1	a. Sumps 3-A and 3-B are presently active.
		b. Sump contents are limited to rainwater containing surface leachate of general facility constituents.
p. 78	¶ 1	a. Sump 4 collects rainwater runoff from Sumps 3-A, B, and C (formerly unpaved area, parking lot to north) and general surface drainage from the western half of the lot area surrounding the maintenance shop.
		b. Discharge of Sump 4 wastewater has always been to Pond 3, (including earlier, smaller configuration).
p. 78	¶ 1	c. During 3 to 4 annual periods of high rainfall, contents were known to spill over and drain to ditch along south border of facility.
		d. Sump 4 contents cannot and have never been able to drain by gravity in the direction of sumps 3-B and 3-C.
p. 78	¶ 1	e. Sump 4 content is limited to rainwater containing surface leachate of general facility constituents.
		f. Sumps 3-B and 3-C are presently active.
	¶ 4	Chemical analyses of wastes refers to copper cement, which is not a waste. Rainwater was not tested and therefore no analytical results exist.

Page, Para. No.		Comment
p. 79	¶ 1	a. Sump 5-B was decommissioned and dismantled and then rebuilt with concrete and fiberglass. Sump 5-A was subsequently clean closed and filled.
		b. Sump 5-C is not known to have ever existed.
	¶ 2	a. Sump 5-A pumped rainwater to the wastewater holding tanks.
		b. Until January 1988, overflow from Pond 3 used to flow to Sumps 5-A and 5-B. Now rainwater is pumped to Pond 3 (Rainwater Tank 3), used in the copper oxide process and then treated in the wastewater treatment system.
		c. Sump 5-A had a 7.5 hp pump; Sump 5-B had a 7.5 hp pump.
		d. Sump 5-C is not known to have ever existed.
	¶ 4	Sumps 5-A and 5-B were combined as Sump 5-B. Plans are to add a fiberglass liner.
	¶ 6	Same as ¶ 3, (c).
p. 80	¶ 1	a. Sump 6-A is fiberglass-lined.
		b. Sump 6-A collects rainwater and miscellaneous process materials and diverts it to the main sump (5-B) where it is diverted to the main wastewater treatment system via a 2 hp pump.
p. 81	¶ 1	a. Sump 6-B collects pump packing water as part of the copper oxide scrubbing process.
		b. Sump contents are pumped back into the process via the scrubbing solution tank.
	¶ 2	Sump 6-B became active in 1985 or 1986.
p. 81	¶ 5	Sump 6-B is equipped with a 10 hp pump.
p. 82		Sump 7 does not exist today and may never have existed.
p. 83	¶ 1	a. The dimensions of Sump 8 were 2.5′ x 2.5′ x 3′.
		b. Sump 8 contained no pump.
		c. Sump 8 collected rainwater and any spilled process wastewater from the copper leach area.

Page, Para. No.		Comment
		d. Sump 8 contents were routed to the current wastewater treatment system via a pump truck.
	¶ 3	Sump 8 was closed within 2 months of becoming operative.
p. 84	¶ 1	a. Sump 9 collected rainwater and any spilled process wastewater from the solder etch area.
		b. Sump 9 contents were routed to the current wastewater treatment system via Sump 5-A and 5-B.
	¶ 3	Sump 9 was closed in January 1989.
	¶ 5	Sump 9 was lined with epoxy-based, sand-fitted masonry mastic.
p. 86		Sump 16 is not known to be active.
p. 87	¶ 1	a. The dimensions of the wastewater treatment system sump are approximately 3' x 6' x 3'.
		b. Filter press filtrate is routed to this sump prior to rerouting back to the wastewater system.
p. 89	¶ 1	a. The In-road collection sump does not presently collect wash water from truck washing operations.
		b. Sump dimensions are approximately 2.5' x 4' x 10' (pump side, to south) and 25' x 4' x 2.5' (north side, connected by spillway pipe).
	¶ 2	In-road collection sump was constructed in 1977 or 1978.
	¶ 5	Under heavy rain conditions, excess wastewater was diverted to Pond 3.
p. 91	¶ 1	SCC owns 8 vacuum trucks that are kept on-site for spill cleanups and cleaning out sumps.

8.3 Consent Agreement for Regulatory Compliance

SCC is presently under a Consent Agreement for Regulatory Compliance (Consent Agreement) per California Health and Safety Code Section 25187 with the State of California Health and Welfare Agency, Department of Health Services (DHS). The effective date of the agreement is August 28, 1987.

The objectives of the agreement are: (1) to identify those aspects of SCC's hazardous waste management activities which DHS alleges to be in violation of Chapter 6.5 of Division 20 of the California Health And Safety Code (Hazardous Waste Control Law; "HWCL") and regulations promulgated thereunder of Title 22 of the California Code of Regulations (22 CR), RCRA and regulations promulgated thereunder at Title 40 of the Code of Federal Regulations (40 CFR), Parts 265, 267 and 270; (2) to establish a schedule by which SCC will implement actions and procedures necessary to ensure its compliance with applicable laws and regulations; (3) to provide mechanisms for DHS review and timely response to and enforcement of those actions which SCC agrees to take in order to ensure its compliance with applicable laws and regulations; and (4) to ensure that the unique recycling capacity which SCC provides for hazardous waste generators in southern California continues to exist and be maintained in full compliance with all applicable federal and state statutes and regulations.

The schedule of activities as has been preset by the Consent Agreement at present includes the elements listed in Table 8-2.

Several of the Consent Agreement elements are directed toward mitigating potential threats to human health and the environment. These presently include Pond #1 closure (3.1.2), the Hazardous Waste Management Unit Inspection Schedule (3.1.6), the Repair and Replacement Program (3.1.10), and Inspections of Hazardous Waste Containers and Storage Areas (3.1.11). Two such elements already completed are the respective clean-ups of the Soil Mound Area and the Contents of Rainwater Tank #3 (3.1.15).

Pond #1 Closure

Certain requirements under the Consent Agreement with the DHS were agreed by the agencies and SCC to be incorporated within the scope of the RFI, including the Pond #1 closure investigation. At the time of this writing it is unknown how this incorporation will be effected or whether other requirements of the Consent Agreement also will be incorporated within the RFI.

TABLE 8-2
SCHEDULE OF CONSENT AGREEMENT ELEMENTS

Paragraph	Activity	Date Submitted	Status
3.1.1	Closure/Post-Closure Financial Assurance	11/24/76 9/30/88	Approved (11/7/88)
3.1.2	Waste Water Treatment Flow Diagram	9/18/87	Pending
3.1.3	Pond #1 Closure/Post-Closure Work Plan	9/18/87	Approved*
3.1.5	Waste Analyses Plan	5/18/88	Approved (10/5/88)
3.1.6	HWMU Inspection Schedule	10/9/87	Pending
3.1.7	HW Personnel/Training List Training Requirements and Plan	9/22/87 Upgraded 12/21/87	Approved (4/19/88)
3.1.8	Contingency Plan	5/18/87	Approved (10/5/88)
3.1.9	Organization of Operating Record DHS Inspections of Operating Record	11/24/87	No Insp.
3.1.10	Repair/Replacement Program	10/17/88	On-going
3.1.11	H.W. Container/Storage Area Inspections	10/9/87	On-going
3.1.12	Part A Application Update	10/9/87	Complete
3.1.13	Biennial Report Acquisition	9/22/87	Complete
3.1.14	Tank Inspections	10/9/87	On-going
3.1.15	Clean-up of Rainwater Tank #3 Advised of project completion	9/18/87 (workplan)	Complete 8/18/88
3.1.15	Clean-up of Soil Mound Area Advised of project completion	9/18/87 (workplan)	Completed 12/15/87
3.2	Project Coordinator Designation	8/31/87	Complete
3.3	Monthly Summary Reports	Monthly	On-going
3.4	Schedule of Compliance Expenditures (included in monthly summary report)	Monthly	On-going
3.5	Compliance Performance Time Table	9/25/87	Complete

* Pending modification per RFI incorporation

Hazardous Waste Management Unit Inspection

SCC is directed to inspect its facilities for malfunctions and deterioration, the results of operator errors and any discharges of hazardous waste to the environment. The inspections must encompass all monitoring safety and security equipment, devices or components or things whose proper maintenance and operation is important to the prevention or detection of environmental or human health hazards or the prompt response thereto.

Repair and Replacement Program

SCC was directed to immediately undertake maintaining and operating the facility to minimize the possibility of a release of hazardous waste to the environment. This effort was to be initiated and completed by (1) repairing any breaks and gaps in containment areas, (2) replacing any leaking tanks and containers, (3) cleaning up any release of hazardous waste to or outside of containment areas that results of 1 and/or 2 of this paragraph, and (4) reducing the release of excessive ammonia vapors in accordance with applicable statutes, regulations and rules.

Hazardous Waste Container and Storage Area Inspections

SCC was directed to immediately inspect all hazardous containers and storage areas for safety, condition, etc. In the event that containers are determined to be deteriorated or damaged, the contents must be transferred to containers in good condition. Additional directions specify container cover security, container segregation and labeling.

Soil Mound Area Cleanup

Pursuant to the approved Work Plan for Remedial Actions for Soil Mound Area, SCC manifested 530 yds^3 of soil via seven loads for disposal at Casmalia Resources Class I landfill. With the exception of a load consisting primarily of concrete, rock, wood, and other debris, samples were taken from each load for analysis. Removal operations were conducted between November 10 and December 10, 1987. Final grading was completed on December 11, 1987. DHS enforcement personnel were notified verbally of job completion.

Rainwater Holding Tank #3 Cleanup

Pursuant to the approved Work Plan for Remedial Actions for Tank #3, SCC removed and manifested 94 yards of sludge material via 12 loads for disposal at Kettleman Hills Class I landfill.

The materials removed from Pond #3 consisted primarily of precipitated metal hydroxide sludges with other inorganic residues (SCC/Targhee, 12/18/87). Analyses of samples taken from Pond #3 discharge lines showed copper concentrations in excess of the STLC. According to manifest records, sludges were removed between June 27 and August 3, 1988. Targhee, Incorporated certified on September 13, 1988 that the rinse waters form Tank #3 did not contain hazardous wastes.

8.4 Miscellaneous Off-site Information

Information developed by the State Water Resources Control Board on Hazardous Substance Storage Containers for Los Angeles County indicates that several sites surrounding SCC have, in the past, stored a variety of compounds in underground storage tanks. It is not known whether any or all of these compounds are presently stored in such a manner, nor if any have inccured increases or decreases in storage volume or whether the respective inventories of the sites have been expanded or reduced in variety.

The following lists show the storage data known as of May 28, 1986:

Pilot Chemical of California
11750 Burke Street
Santa Fe Springs, CA 90670

Tank #	Contents	Volume	Status
T-10	xylene	10,000 gal	Reportedly empty
T-18	xylene	12,000 gal	Reportedly empty
T-19	xylene	12,000 gal	Reportedly empty

Tank #	Contents	Volume	Status
T-20	ammonia hydroxide	12,000 gal	Reportedly empty
T-36	sodium hydroxide	12,000 gal	Reportedly in use
A-23	sulfur dioxide	5,000 gal	Unknown
A-169	sulfur dioxide	20,000 gal	Unknown
A-195	alkylbenzene	20,000 gal	Unknown
A-196	alkybenzene	20,000 gal	Unknown

Liquid Air Corporation Industry
8832 Dice Road
Santa Fe Springs, CA 90670

Tank #	Contents	Volume	Status
01	regular gas	6,500 gal	Unknown
02	diesel	6,500 gal	Unknown
03	acetone	6,200 gals	Unknown
04	calcium hydroxide		Unknown
05	calcium hydroxide		Unknown
06	waste oil		Unknown

Emery Industries Division
8724 S. Dice Road
Santa Fe Springs, CA 90670

Tank #	Contents	Volume	Status
U50	methyl alcohol	10,000 gal	Unknown
U49	isopropryl alcohol	10,000 gal	Unknown
U17	ethylene oxide	9,900 gal	Unknown
U16	ethylene oxide	9,900 gal	Unknown
U51	isopropyl alcohol	10,000 gal	Unknown
I-23	ethylene oxide	20,000 gal	Unknown

8.5 Pilot Chemical Company Investigation

Pilot Chemical Company (Pilot), located north of SCC, retained Clayton Environmental Consultants, Inc. to "obtain an approved underground storage tank compliance program for its facility" (Clayton, 1988). Pilot manufactures industrial soaps and detergents.

Clayton performed a "soil assessment and preliminary ground water investigation for the purpose of assessing the nature and extent of groundwater contamination at the site to provide the baseline data needed for the implementation" of a ground water remediation program.

Clayton submitted a report dated September 28, 1988 to Pilot entitled Soil Assessment and Preliminary Shallow Groundwater Investigation, Underground Xylene Storage Tank Cluster, Pilot Chemical Company. In this report, Clayton identified that Pilot currently housed nine underground storage tanks. The report attempts to distinguish between the active tanks and the tanks intended to be closed. These were reportedly 5 tanks, all empty at the time, slated for closure by removal. Three of these tanks reportedly contained xylene, one contained ammonia and one contained caustic (sodium hydroxide). In an apparent error or contradiction, the caustic tank is also listed as having been in use.

Clayton advanced three soil borings to depths of 60 feet in an attempt to satisfy tank monitoring leak detection requirements under the Los Angeles County Department of Public Works (LACDPW). "Elevated levels" of volatile organic compounds were detected in drill cuttings and confirmed by laboratory analysis. The boreholes were left open for 21 days prior to two of them being converted to ground water monitoring wells. At this time, a fourth borehole was also drilled and fitted with a monitoring well.

Soil analyses results showed the presence of ethylbenzene (ND-100 mg/kg), toluene (.06-220 mg/kg) and xylenes (.04-480 mg/kg). Ground water analyses from three wells showed benzene (ND-14 mg/kg), toluene (0.4-14,000 mg/kg), total xylenes (150-6,000 mg/kg), ethylbenzene (ND-1,400 mg/kg), chloroform (1.8-25 mg/kg), 1,2-dichloroethane (19-58 mg/kg), bromoform (ND-2.6 mg/kg) and bromodichloromethane (ND-15 mg/kg). Ground water contamination was reportedly highest in the downgradient wells.

Clayton performed slug tests (Bouwer and Rice (1976) method) on the monitoring wells and porosity tests on soil samples, integrating these data with field-determined hydraulic gradient information to calculate average hydraulic conductivity (2.38 ft/day) and average ground water flow velocity (15.27 feet/year).

Clayton recommended and received approval from Pilot to install and conduct hydraulic testing on a groundwater extraction well. The status of this project is unknown at this time but its purpose is apparently to conceptualize, develop and permit a ground water remediation system. Clayton further recommended that the extent of soil and ground water contamination be determined and that "conceptual soil remediation options be proposed based on future tests." The status of this recommendation is unknown.

8.6 Underground Storage Tank Removals — July 1989
Toxguard Systems, Inc.

Two single-walled underground fuel storage tanks, one 10,000 gal. gasoline and one 10,000 gal. diesel, were removed from the site by Toxguard Systems, Inc. in July 1989. The tanks were located adjacent to the drum wash area to the east (Figure 2). The excavation remains open pending further investigation.

Although pressure tests at the time of removal of the tanks showed no evidence of leakage, soil samples obtained from the excavation indicate the presence of petroleum hydrocarbons (identified by the laboratory as gasoline and diesel fuels). Analyses from six sample locations showed total petroleum hydrocarbons ranging in concentrations from 680 to 7030 mg/kg (EPA method 8015 modified) and from 7,200 to 33,500 mg/kg (EPA method 418.1). Analysis by EPA method 8020 (602) showed the presence of benzene (17.6 to 3850 mg/kg), toluene (57 to 7200 mg/kg), xylenes (35 to 11,500 mg/kg) and ethylbenzene (ND to 860 mg/kg). Sample locations and analytical results are included in Appendix H.

Additional studies to determine the lateral and vertical extent of contamination are incorporated within the scope of the RFI.

8.7 Proposed Ferric Chloride Process Rehabilitation Area Department of Health Services Inspections — December 1989 - March 1990

Surface soil samples taken in and around the proposed Ferric Chloride Rehabilitation Area by the California Department of Health Services (DHS) on December 14, 1989 (DHS 1-5), and March 14, 1990 (SCC-DM-001-004) were analyzed for pesticides/polychlorinated biphenyls (PCBs) by EPA Method 8080. Concentrations ranged from 69 mg/kg at DHS-4 to 720 mg/kg at

SCC-DM-002. The average concentration of the eight samples collected is 308 mg/kg. Sample locations and analytical results are included in Appendix I.

Additional studies to determine the lateral and vertical extent of contamination are incorporated within the scope of the RFI.

Section 9

9.0 REFERENCES

1. California Department of Health Services; Interim Status Document # CAD008488025, 16 December 1981, 23 p.

2. California Department of Water Resources; Bulletin 104 Appendix A, June 1961, 181 p.

3. Regional Water Quality Control Board; Comprehensive Ground Water Monitoring Evaluation at Southern California Chemical Company, 15 June 1988, 28 p.

4. J. H. Kleinfelder & Associates; Revised Proposal for Environmental Studies, Southern California Chemical Co., Inc., Santa Fe Springs, California, 13 June 1984, 5 p.

5. J. H. Kleinfelder & Associates; Revised Proposal for Environmental Studies, Southern California Chemical Co., Inc., Santa Fe Springs, California, 26 November 1984, 13 p.

6. J. H. Kleinfelder & Associates; Environmental Monitoring Study, Southern California Chemical Co., Inc., Santa Fe Springs, California, June 1985 20 p.

7. J. H. Kleinfelder & Associates; Work Plan for Assessment Phase, Southern California Chemical Company, (no date) 16 p.

8. J. H. Kleinfelder & Associates; Hydrogeologic Assessment of Pond Number 1, Southern California Chemical Co., Inc., Santa Fe Springs, California, 24 October 1985, 18 p.

9. J. H. Kleinfelder & Associates; Environmental Assessment, Southern California Chemical Co., Inc., Santa Fe Springs, California, March 1986, 28 p.

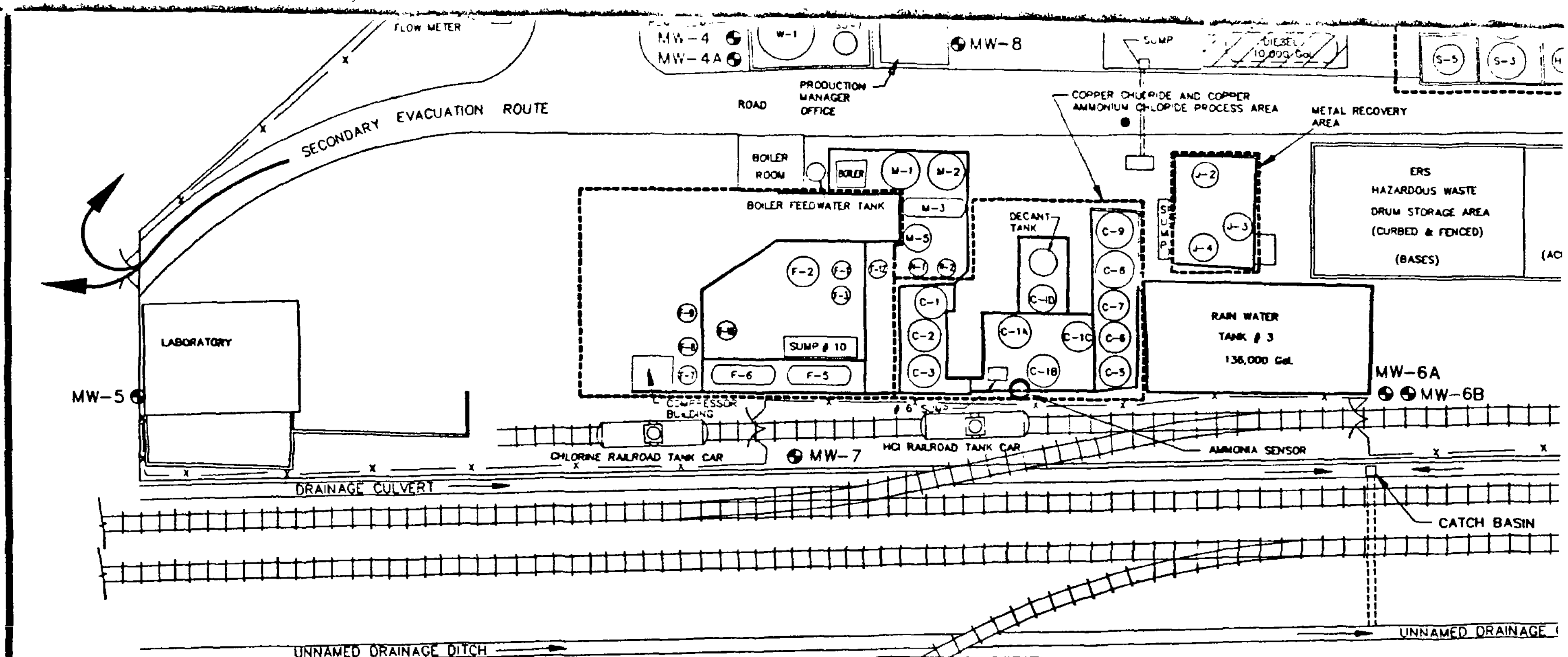
10. A. T. Kearney, Inc., and Science Applications International Corporation; RCRA Facility Assessment, Southern California Chemical Company, Inc., Santa Fe Springs, California, September 1987, 97 p.

11. Targhee, Inc.; Workplan, Closure/Post-Closure, Pond Number 1, Southern California Chemical Company, Santa Fe Springs, California, (no date) 14 p.

12. United States Environmental Protection Agency; Aerial Photographic Analysis of the Southern California Chemical Company, July 1988.

MAPS AND FACILITY DRAWINGS REVIEWED

Drawing No.	Date	Description
13 of 19	1/13/75	Settling Pond Modifications
SK-44	12/9/75	Water Treatment System
FD-8	10/28/76	Piping Schematic
FD-3A	1/31/77	Pipe Layout
1	5/21/74	Plant Layout
17 of 17	5/21/74	Plant Water Treatment System
FD-3	11/1/76	General Improvements
FD-1	11/8/76	Plot Plant
19 of 19	5/21/74	Plant Water Treatment System
FD-2		Plan View and Cross Section of Service Road
FL-0100		Plot Plan
1004-A	2/1/73	Tank Installation, 10,000 gal size shown
C-2	6/17/74	Copper Dioxide Plant Layout
101	6/19/86	Sanitary Sewer Detail Rainwater
102	6/24/86	Sanitary Sewer Detail W-1, W-2, and Filter Press
103	6/19/86	Drainage Plan
104	6/18/86	Sanitary Sewer
105	6/24/76	Schematic Industrial Waste Water Flow Rates
SCC-1	5/22/84	Site Plan Rainwater System Tank 2,3, & 4
FL0100	8/1/84	Plot Plan
S-101	12/17/85	Site and Vicinity Plan
C-201	10/12/86	Overhead Powerlines, Lights, Monitoring Wells and U.G. lines
W-0104	3/25/86	Wastewater Transfer Area
W-0103	3/25/86	Wastewater Facility
M-400	1/25/89	Existing Site Plan and Key Plan



NO	DATE	REVISIONS	BY

PROJECT NO	2279-111-A	DATE
DESIGNED BY	J.E.	10-18-89
DRAWN BY		
CHECKED BY		
ENGINEER		
REGISTRATION NO		DATE

BASED ON:

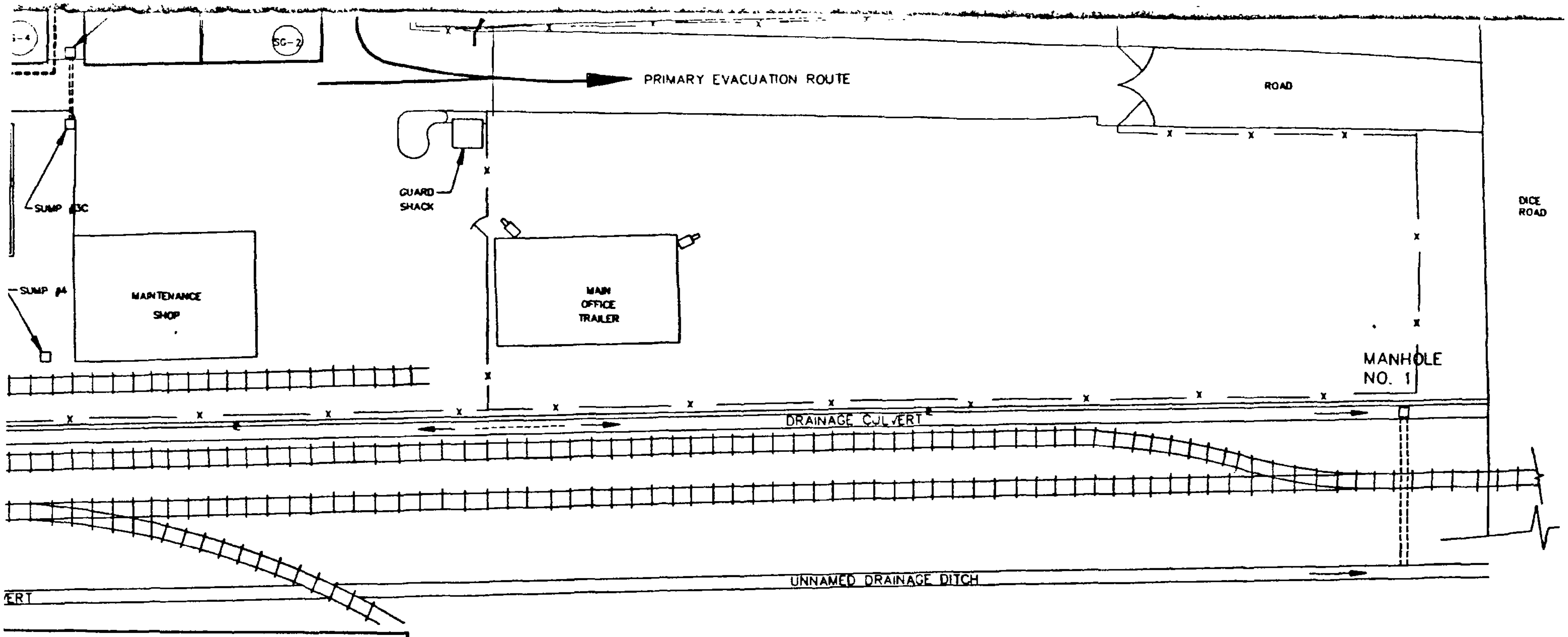
R.L. WOOD & ASSOCIATES, INC.
ENGINEERS

16321 Gothard Ave., Suite H (714) 848-6774
Huntington Beach, California, 92647

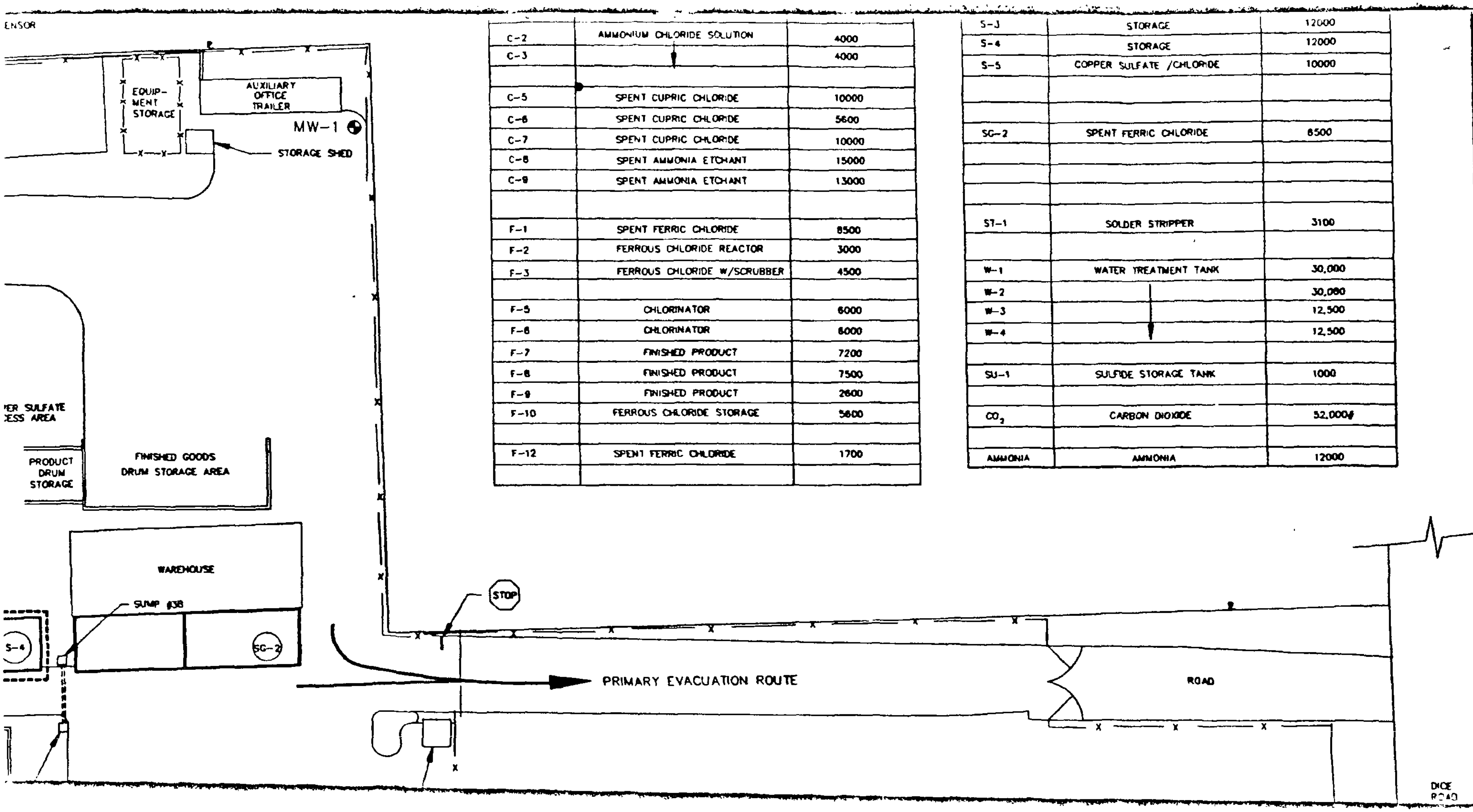
PREPARED BY:

CAMP DRESSER

18881 Von Karman Suite
Irvine, California 92715-1
(714) 752-5452

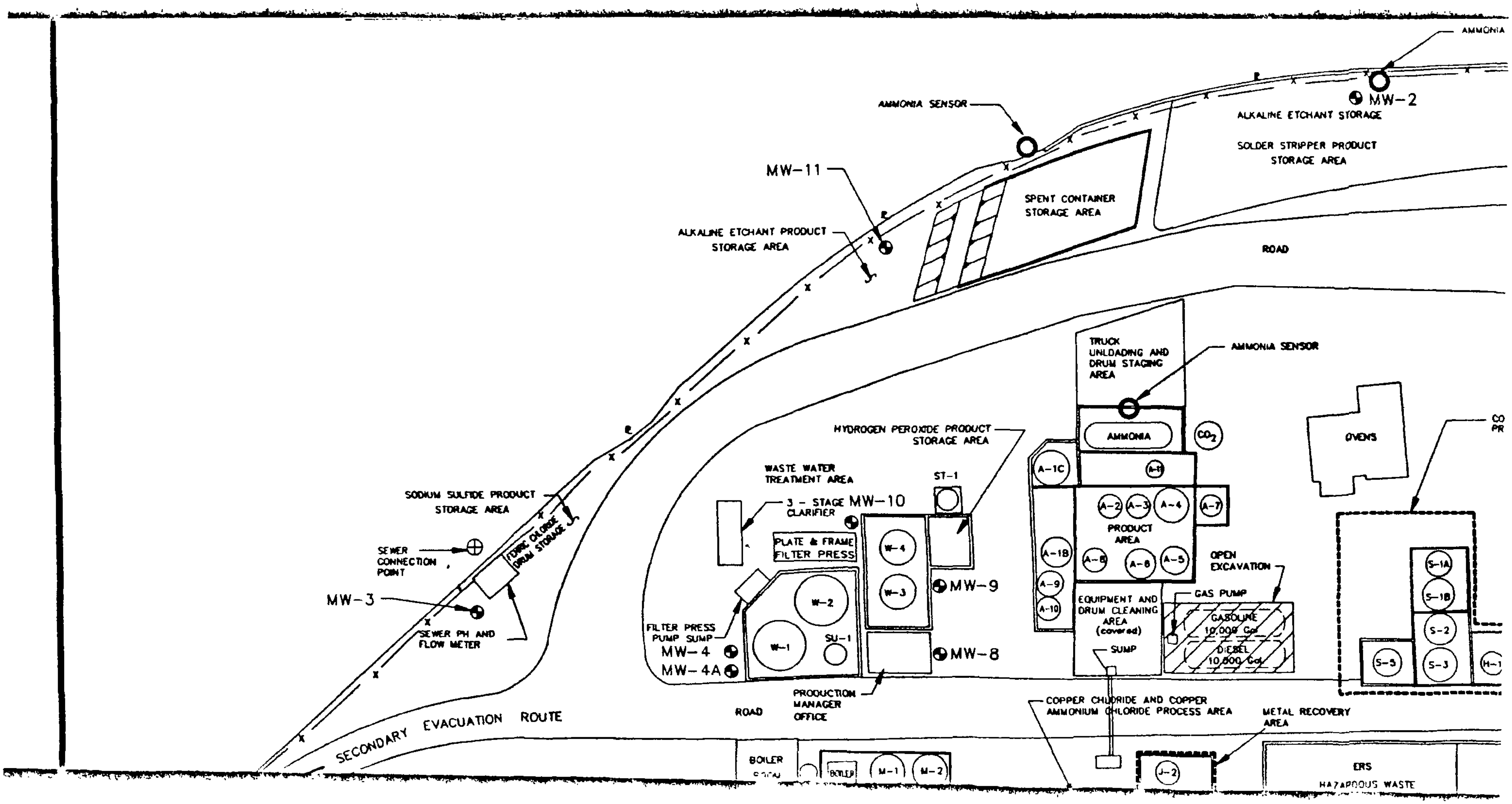


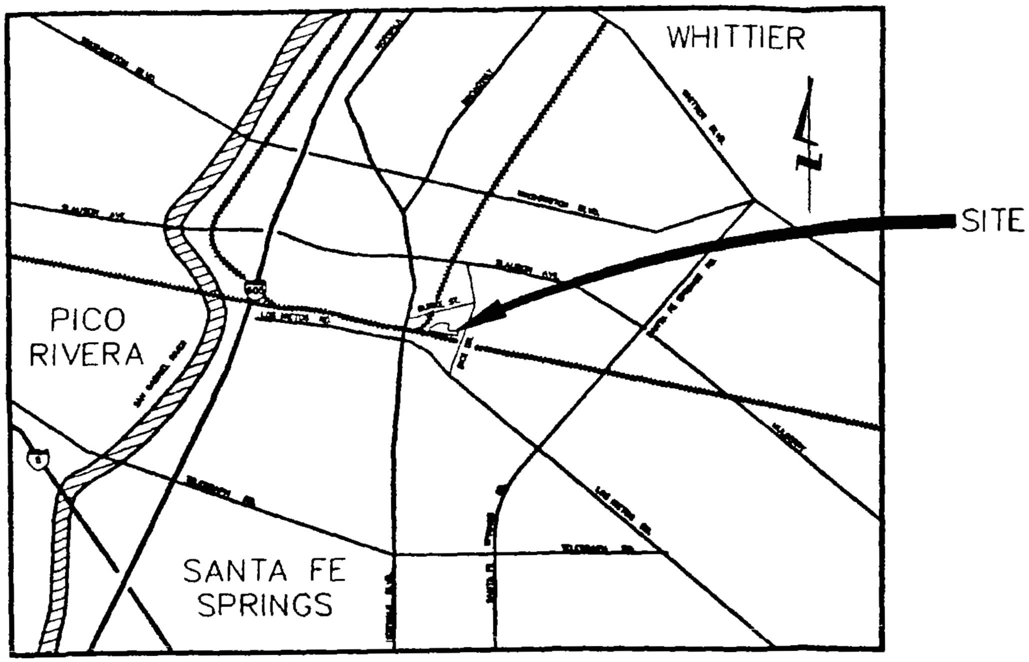
McKEE INC. CDM environmental engineers, scientists, planners & management consultants	SOUTHERN CALIFORNIA CHEMICAL 8851 DICE ROAD SANTA FE SPRINGS, CALIFORNIA CLIENT	EXISTING SITE PLAN PROJECT	SCALE 1"=30.0' JOB NUMBER 2279-111-A FIGURE 2



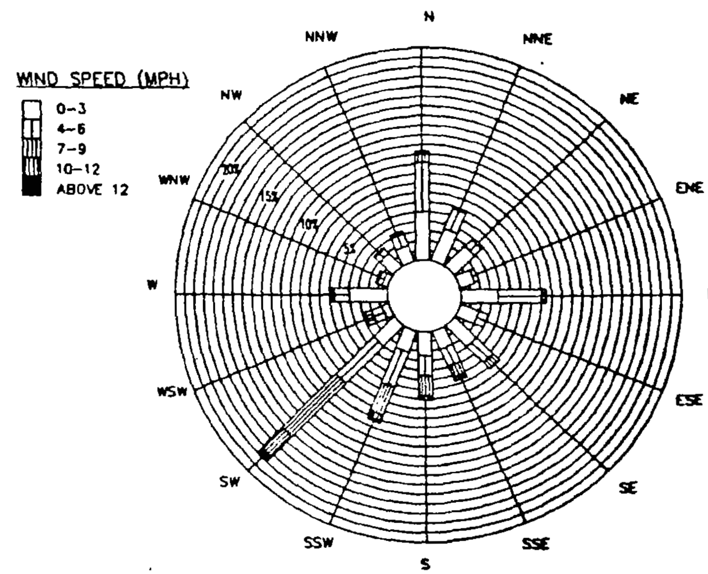
C-2	AMMONIUM CHLORIDE SOLUTION	4000
C-3		4000
C-5	SPENT CUPRIC CHLORIDE	10000
C-6	SPENT CUPRIC CHLORIDE	5600
C-7	SPENT CUPRIC CHLORIDE	10000
C-8	SPENT AMMONIA ETCHANT	15000
C-9	SPENT AMMONIA ETCHANT	13000
F-1	SPENT FERRIC CHLORIDE	8500
F-2	FERROUS CHLORIDE REACTOR	3000
F-3	FERROUS CHLORIDE W/SCRUBBER	4500
F-5	CHLORINATOR	6000
F-6	CHLORINATOR	6000
F-7	FINISHED PRODUCT	7200
F-8	FINISHED PRODUCT	7500
F-9	FINISHED PRODUCT	2600
F-10	FERROUS CHLORIDE STORAGE	5600
F-12	SPENT FERRIC CHLORIDE	1700

S-3	STORAGE	12000
S-4	STORAGE	12000
S-5	COPPER SULFATE /CHLORIDE	10000
SG-2	SPENT FERRIC CHLORIDE	6500
ST-1	SOLDER STRIPPER	3100
W-1	WATER TREATMENT TANK	30,000
W-2		30,000
W-3		12,500
W-4		12,500
SU-1	SULFIDE STORAGE TANK	1000
CO_2	CARBON DIOXIDE	52,000#
AMMONIA	AMMONIA	12000

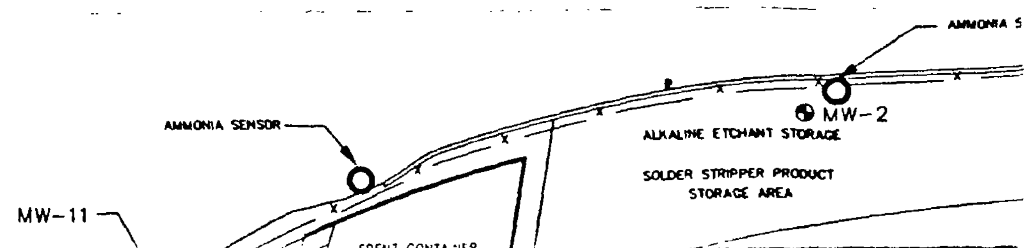

AMMONIA
MW-2
ALKALINE ETCHANT STORAGE
SOLDER STRIPPER PRODUCT STORAGE AREA
AMMONIA SENSOR
MW-11
SPENT CONTAINER STORAGE AREA
ALKALINE ETCHANT PRODUCT STORAGE AREA
ROAD
TRUCK UNLOADING AND DRUM STAGING AREA
AMMONIA SENSOR
AMMONIA
CO_2
OVENS
HYDROGEN PEROXIDE PRODUCT STORAGE AREA
WASTE WATER TREATMENT AREA
ST-1
A-1C
A-11
SODIUM SULFIDE PRODUCT STORAGE AREA
3 - STAGE CLARIFIER
MW-10
A-2
A-3
A-4
A-7
SEWER CONNECTION POINT
FERRIC CHLORIDE DRUM STORAGE
PLATE & FRAME FILTER PRESS
W-4
PRODUCT AREA
A-1B
A-6
A-8
A-5
OPEN EXCAVATION
S-1A
S-1B
W-2
W-3
MW-9
A-9
A-10
EQUIPMENT AND DRUM CLEANING AREA (covered)
GAS PUMP
GASOLINE 10,000 Gal
DIESEL 10,000 Gal
MW-3
SEWER PH AND FLOW METER
FILTER PRESS PUMP SUMP
MW-4
MW-4A
W-1
SU-1
MW-8
SUMP
S-2
S-5
S-3
H-1
ROAD
PRODUCTION MANAGER OFFICE
COPPER CHLORIDE AND COPPER AMMONIUM CHLORIDE PROCESS AREA
METAL RECOVERY AREA
SECONDARY EVACUATION ROUTE
BOILER
BOILER
M-1
M-2
J-2
ERS
HAZARDOUS WASTE



LOCATION PLAN

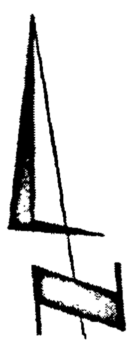


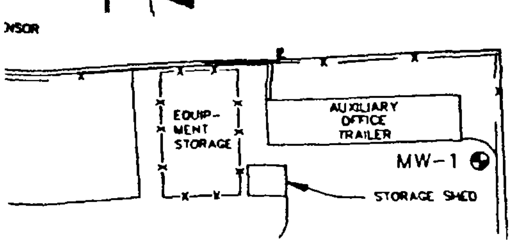
WIND ROSE @ PICO RIVERA (1964)



LEGEND

℞	PROPERTY LINE
—x—x—	FENCE LINE
⊕	MONITORING WELL





STORAGE TANK SUMMARY

TANK No	PRODUCT	CAPACITY (Gal)
	10% AQUA AMMONIA SOLUTION	
A-1B		8000
A-1C		8000
A-2		10000
A-3		6000
A-4		13000
A-5		9500
A-6		8000
A-7	3% HCL SOLUTION	3000
A-8	SCRUBBER & PUMP TANK	6000
A-9	AMMONIUM CHLORIDE SOLUTION	12000
A-10		4500
A-11	10% AMMONIUM HYDROXIDE SOLUTION	10000
C-1	AMMONIA RECOVERY	8000
C-1A	REACTOR	8000
C-1B	REACTOR	6000
C-1C	REACTOR	6000
C1-D	REACTOR	6800
C-2	AMMONIUM CHLORIDE SOLUTION	4000
C-3		4000
C-5	SPENT CUPRIC CHLORIDE	10000
C-6	SPENT CUPRIC CHLORIDE	5600
C-7	SPENT CUPRIC CHLORIDE	10000
C-8	SPENT AMMONIA ETCHANT	15000
C-9	SPENT AMMONIA ETCHANT	13000

TANK No.	PRODUCT	CAPACITY (Gal.)
H-1	SULFURIC ACID	6000
J-2	COPPER SULFATE SOLUTION	3300
J-3	METAL TREATMENT MIX TANK	5900
J-4	EMPTY	5400
M-1	MURIATIC ACID	12000
M-2		12000
M-3		6000
M-5		10000
N-1	CAUSTIC SODA SOLUTION	4800
N-2		5200
S-1A	REACTOR	7000
S-1B	REACTOR	7500
S-2	STORAGE	6000
S-3	STORAGE	12000
S-4	STORAGE	12000
S-5	COPPER SULFATE /CHLORIDE	10000
SG-2	SPENT FERRIC CHLORIDE	6500

R1	SINGLE FAMILY RESIDENTIAL
M1	LIGHT MANUFACTURING
M2	HEAVY MANUFACTURING
BP	BUFFER PARKING (ORDINANCE NO. 201)
ZONE C	AREAS OF MINIMAL FLOODING
ZONE B	AREAS BETWEEN LIMITS OF THE 100 YEAR FLOOD AND 500 YEAR FLOOD; OR CERTAIN AREAS SUBJECT TO 100 YEAR FLOODING WITH AVERAGE DEPTHS LESS THAN ONE (1) FOOT; OR WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE (1) SQUARE MILE; OR AREAS PROTECTED BY LEVEES FROM THE BASE FLOOD
*	**CONTOURS BASED UPON 1981 USGS WHITTIER QUADRANGLE 7.5 MINUTE SERIES (TOPOGRAPHIC)**

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NO	DATE	REVISIONS	BY	NO	DATE	REVISIONS	BY	PR
								DE
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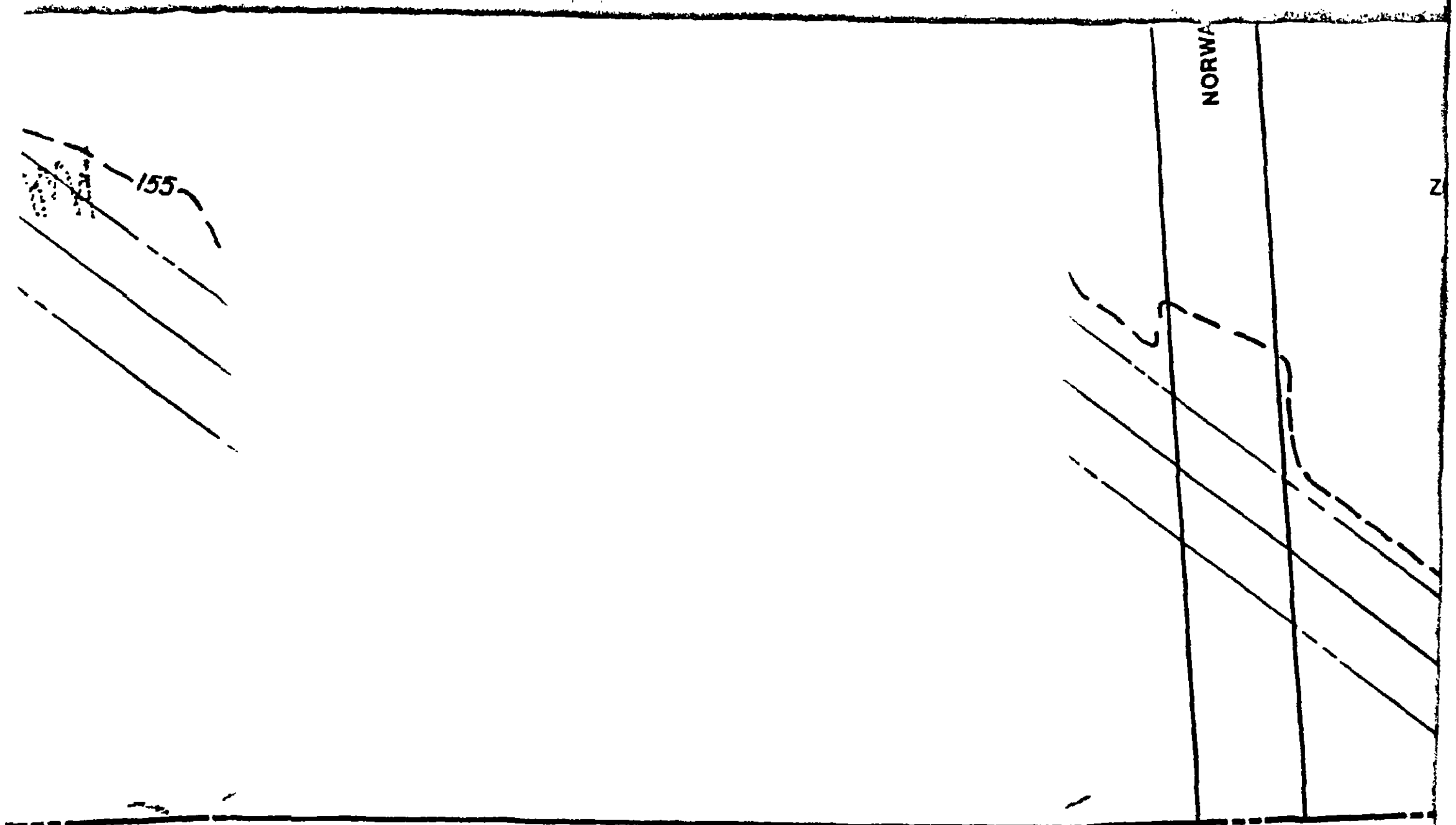
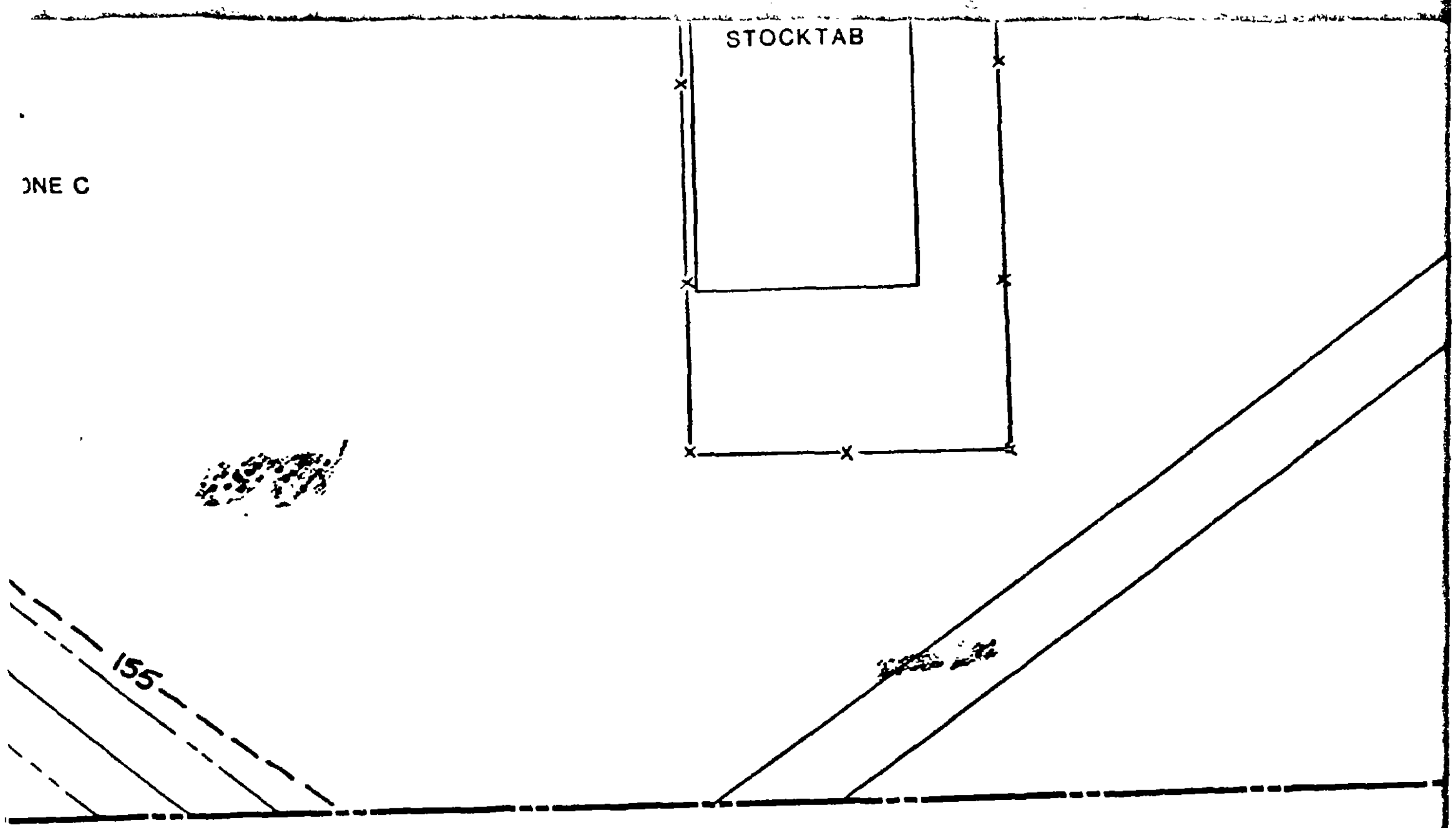
								EN
								RE



BASED ON:

...JECT NO.	DATE	R.L. WOO...
...IGNED BY J.E.	10 18 89	
...AWN BY		
...ECKED BY		16321 Gothar...
...GINEER		Huntingt...
...ISTRATION NO. DATE		



PREPARED BY:

D & ASSOCIATES, INC.
ENGINEERS

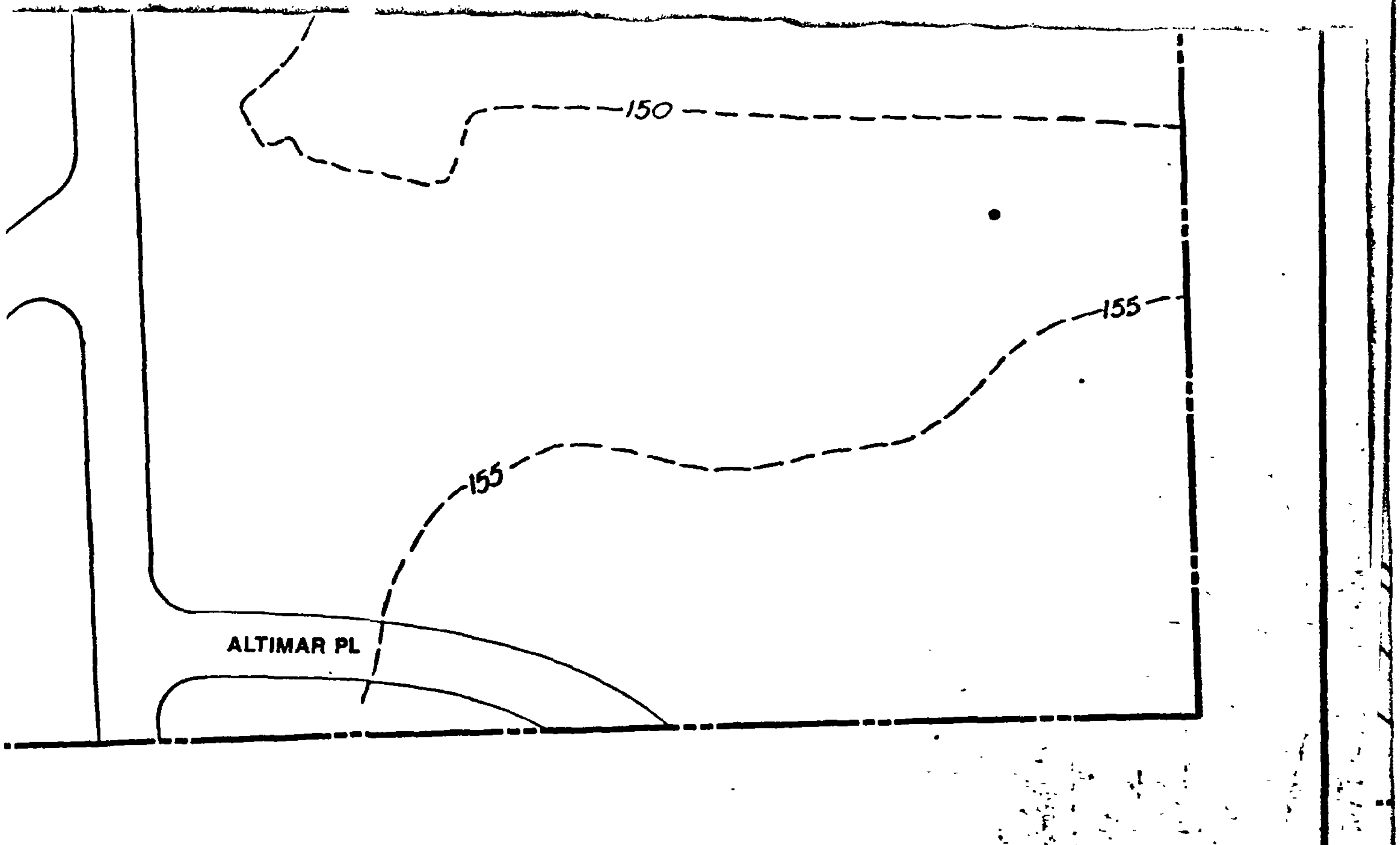
Ave., Suite H (714) 848-6774
n Beach, California, 92647

CAMP DRESSER & McKEE INC.

18881 Von Karman Suite 650
Irvine, California 92715-1449
(714) 752-5452

CDM
environmental engineers, scientists, planners & management consultants

SOUTHERN
88
SANTA FE

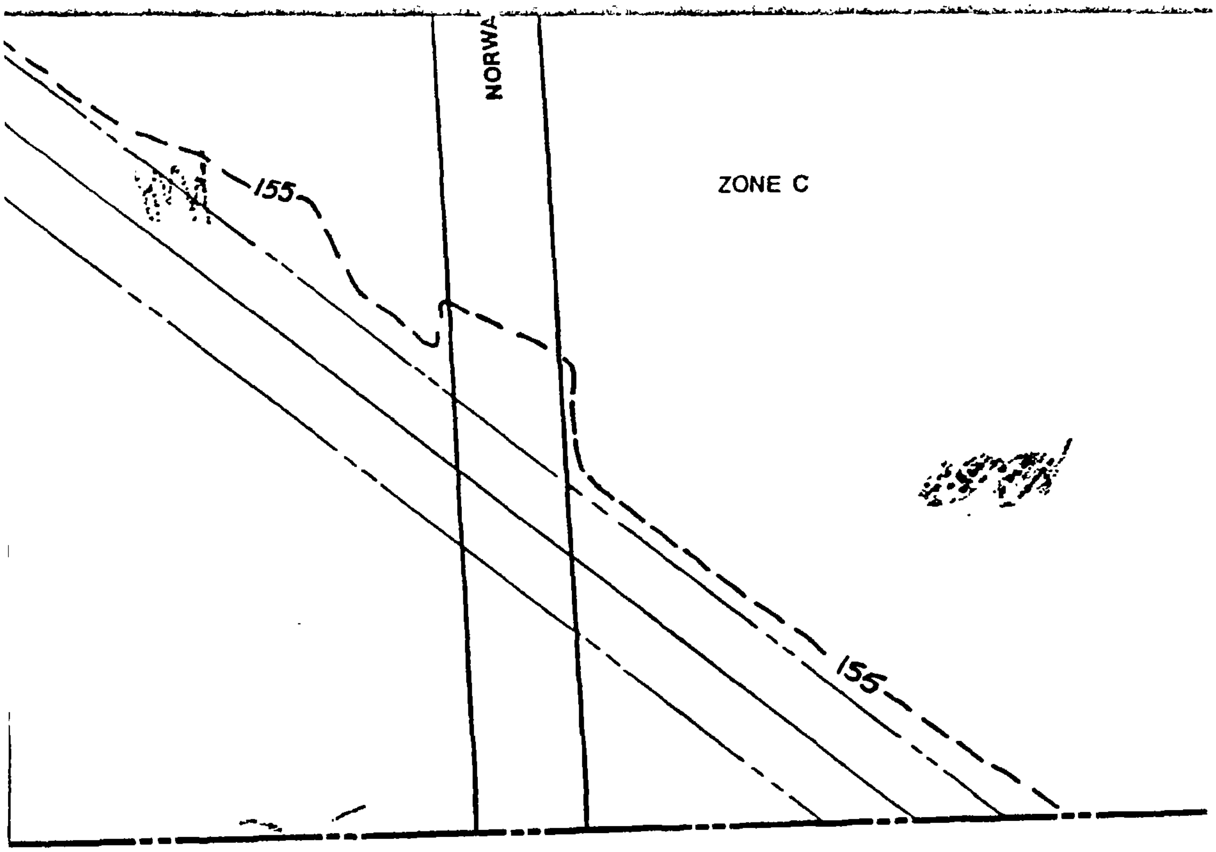


CALIFORNIA CHEMICAL 1 DICE ROAD SPRINGS, CALIFORNIA CLIENT	LOCAL PHYSIOGRAPHY PROJECT	SCALE 1"=100.0' JOB NUMBER 2279-111-A FIGURE 3

R1	SINGLE FAMILY RESIDENTIAL
M1	LIGHT MANUFACTURING
M2	HEAVY MANUFACTURING
BP	BUFFER PARKING (ORDINANCE NO. 201)
ZONE C	AREAS OF MINIMAL FLOODING
ZONE B	AREAS BETWEEN LIMITS OF THE 100 YEAR FLOOD AND 500 YEAR FLOOD; OR CERTAIN AREAS SUBJECT TO 100 YEAR FLOODING WITH AVERAGE DEPTHS LESS THAN ONE (1) FOOT; OR WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE (1) SQUARE MILE OR AREAS PROTECTED BY LEVEES FROM THE BASE FLOOD
*	CONTOURS BASED UPON 1981 USGS WHITTIER QUADRANGLE 7.5 MINUTE SERIES (TOPOGRAPHIC)

NO.	DATE	REVISIONS	BY	NO.	DATE	REVISIONS

DRAWING LAST UPDATED ON 03-21-[illegible] - 14:23



BASED ON: | PREPAR

BY	PROJECT NO.	DATE
	DESIGNED BY J.E.	10 18 89
	DRAWN BY	
	CHECKED BY	
	ENGINEER ____	
	REGISTRATION NO ____ DATE ____	

R.L. WOOD & ASSOCIATES, INC.
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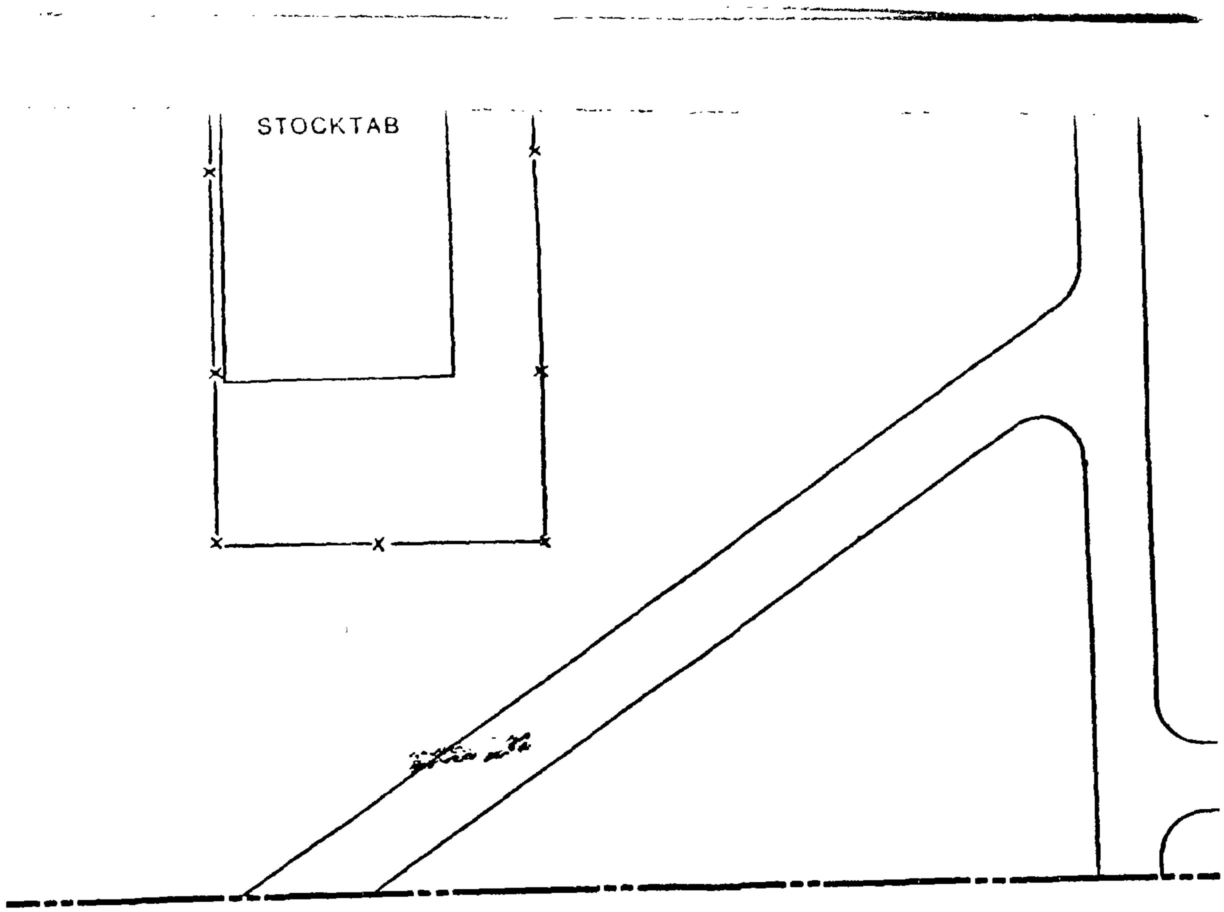
16321 Gothard Ave., Suite H (714) 848-6774
Huntington Beach, California, 92647

CAMP

18881 Vc
Irvine, Cc
(714) 75



ED BY:

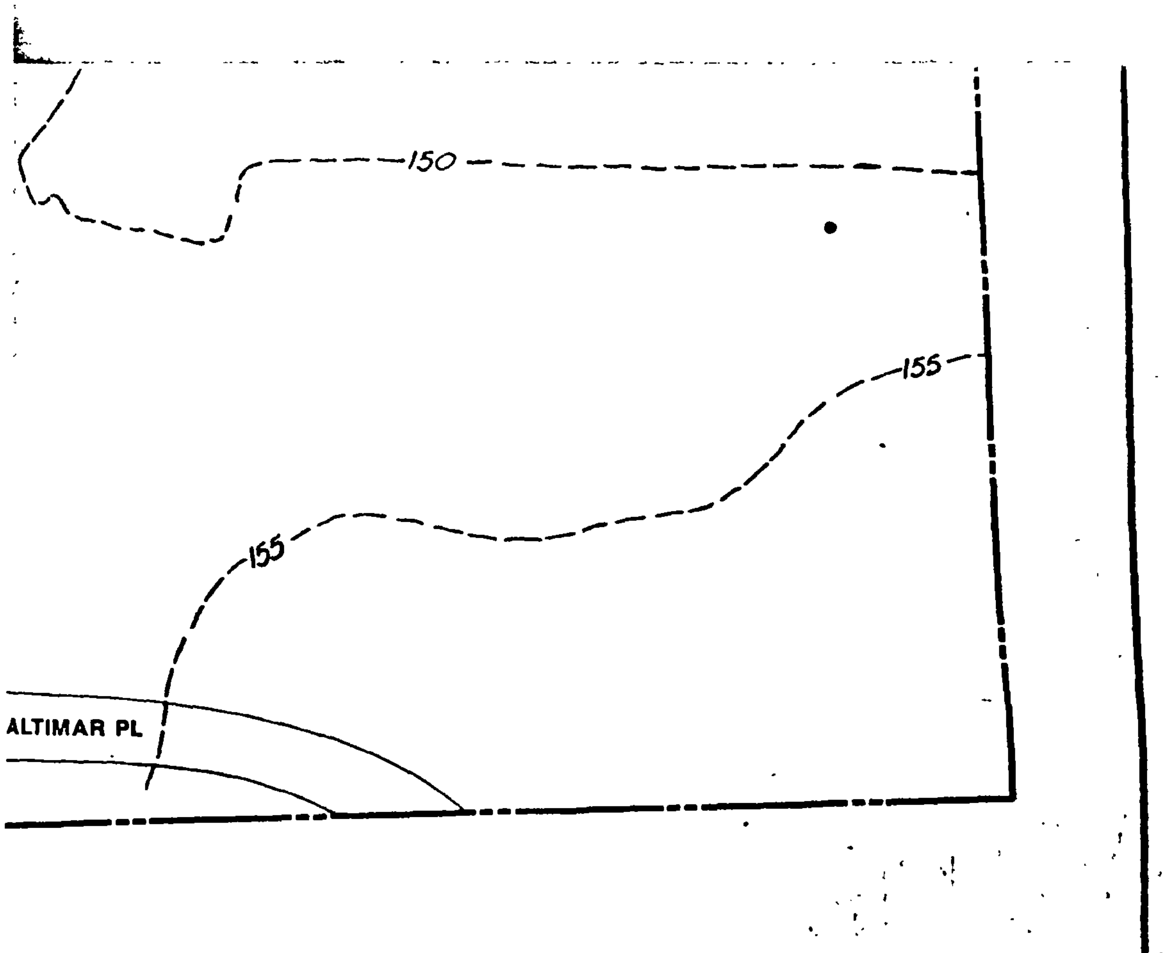
DRESSER & McKEE INC.

n Karman Suite 650
lifornia 92715-1449
2-5452

CDM
environmental engineers scientists, planners & management consultants

SOUTHERN CALIFORNIA
8851 DICE ROA
SANTA FE SPRINGS, C

CLIENT



CHEMICAL
)
LIFORNIA

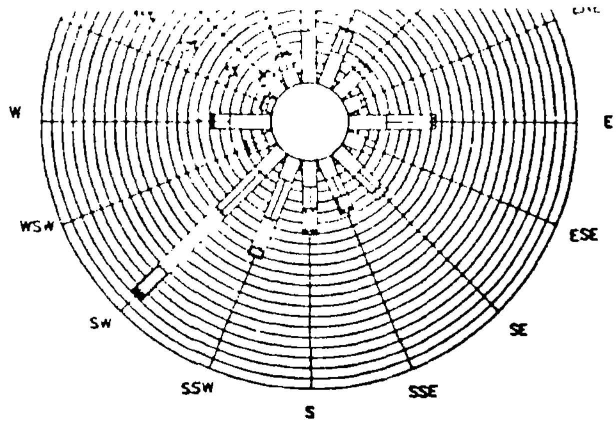
LOCAL PHYSIOGRAPHY

PROJECT

SCALE
1"=100.0'

JOB NUMBER
2279-111-A

FIGURE 3



WIND ROSE @ PICO RIVERA (1964)

LEGEND

TOPOGRAPHIC CONTOUR (FT.) *

1000' LIMIT FROM PROPERTY LINE

℄ PROPERTY LINE

APPROXIMATE LOCATION PRODUCTION WELL

FLOOD ZONE BOUNDARY

ZONING BOUNDARY

WATER FLOW DIRECTION

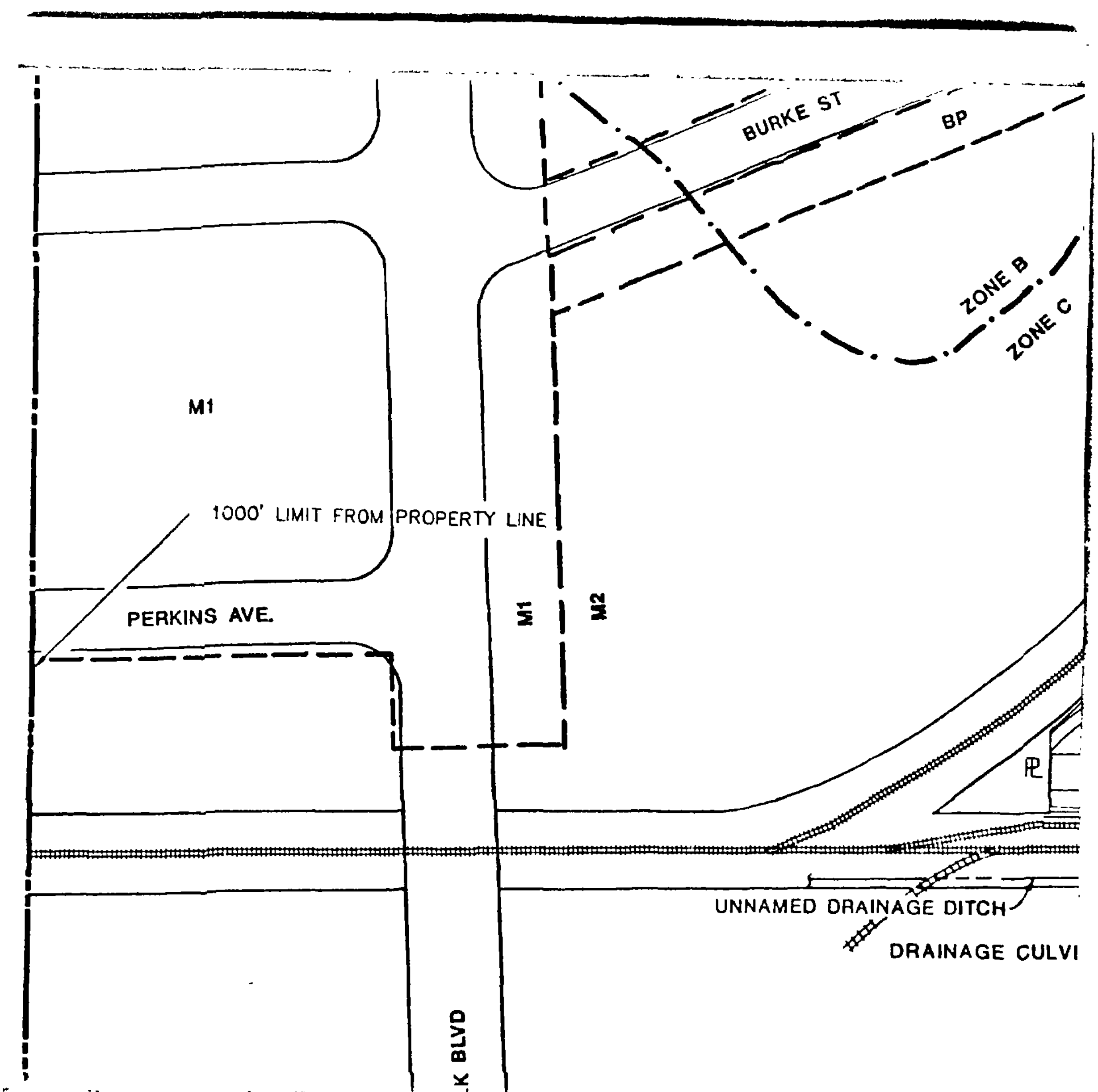
SURFACE WATER DRAINAGE DITCH

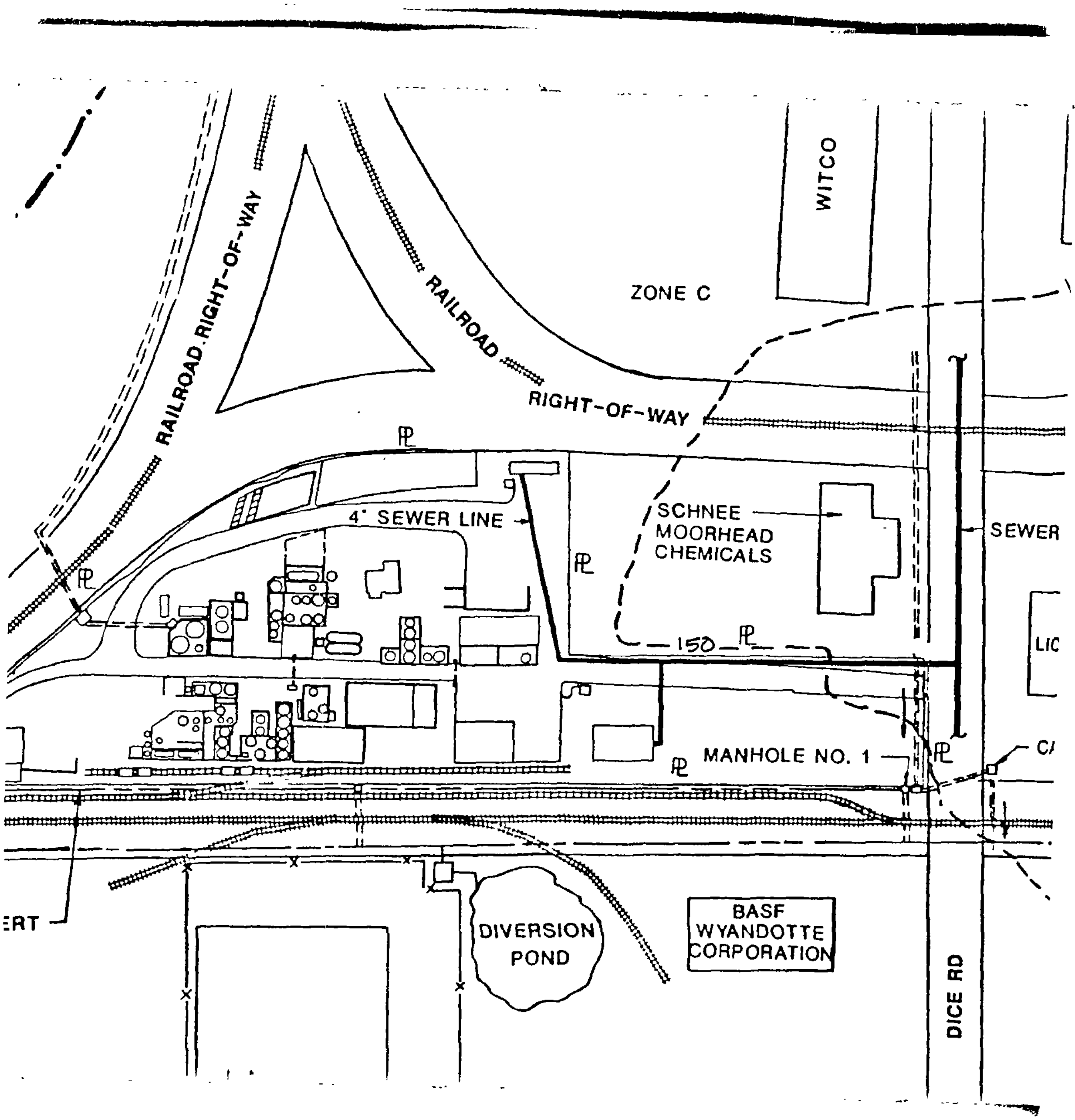
STORM DRAIN

SEWER LINE

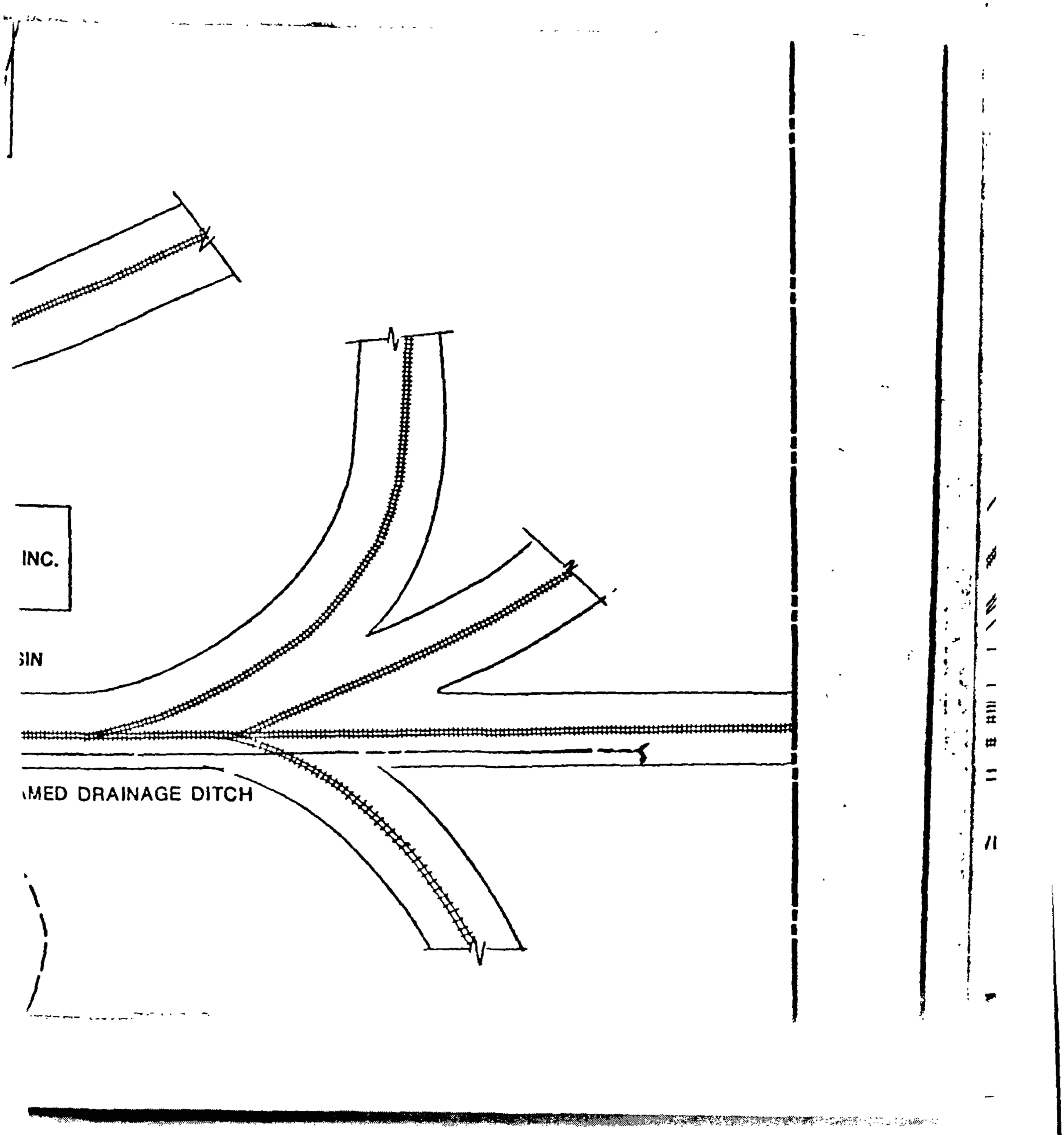
CATCH BASIN

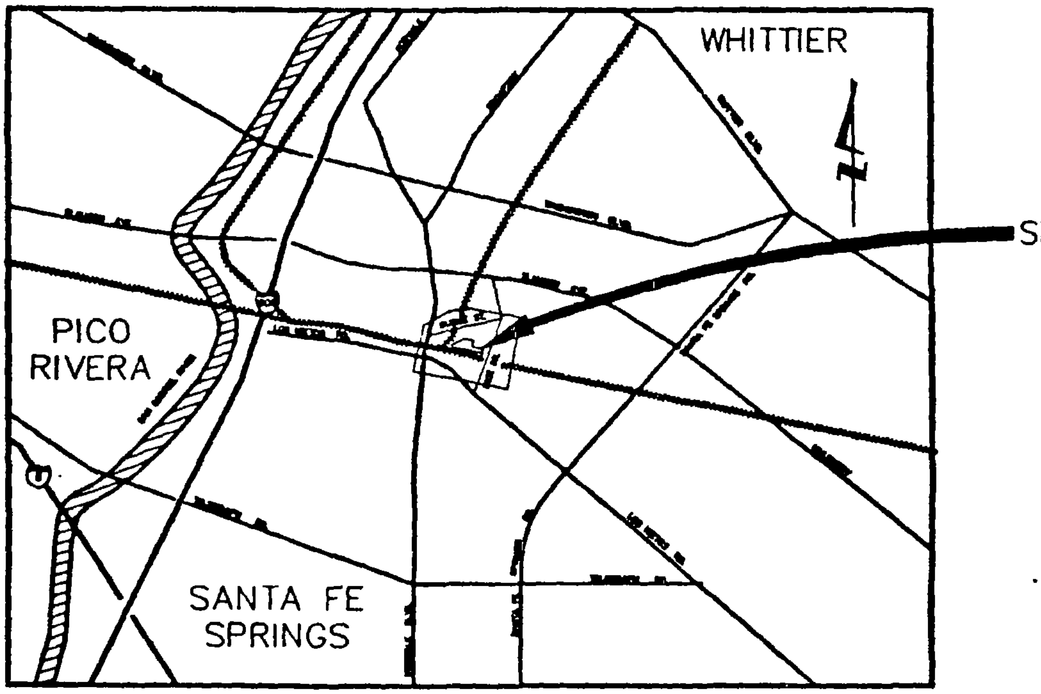
MANHOLE


BURKE ST
BP
ZONE B
ZONE C
M1
1000' LIMIT FROM PROPERTY LINE
PERKINS AVE.
M1
M2
PL
UNNAMED DRAINAGE DITCH
DRAINAGE CULVI
K BLVD

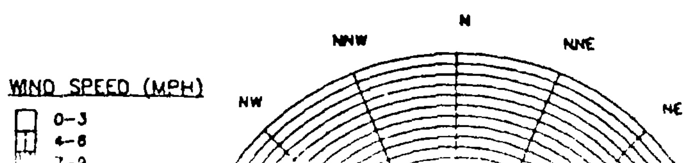


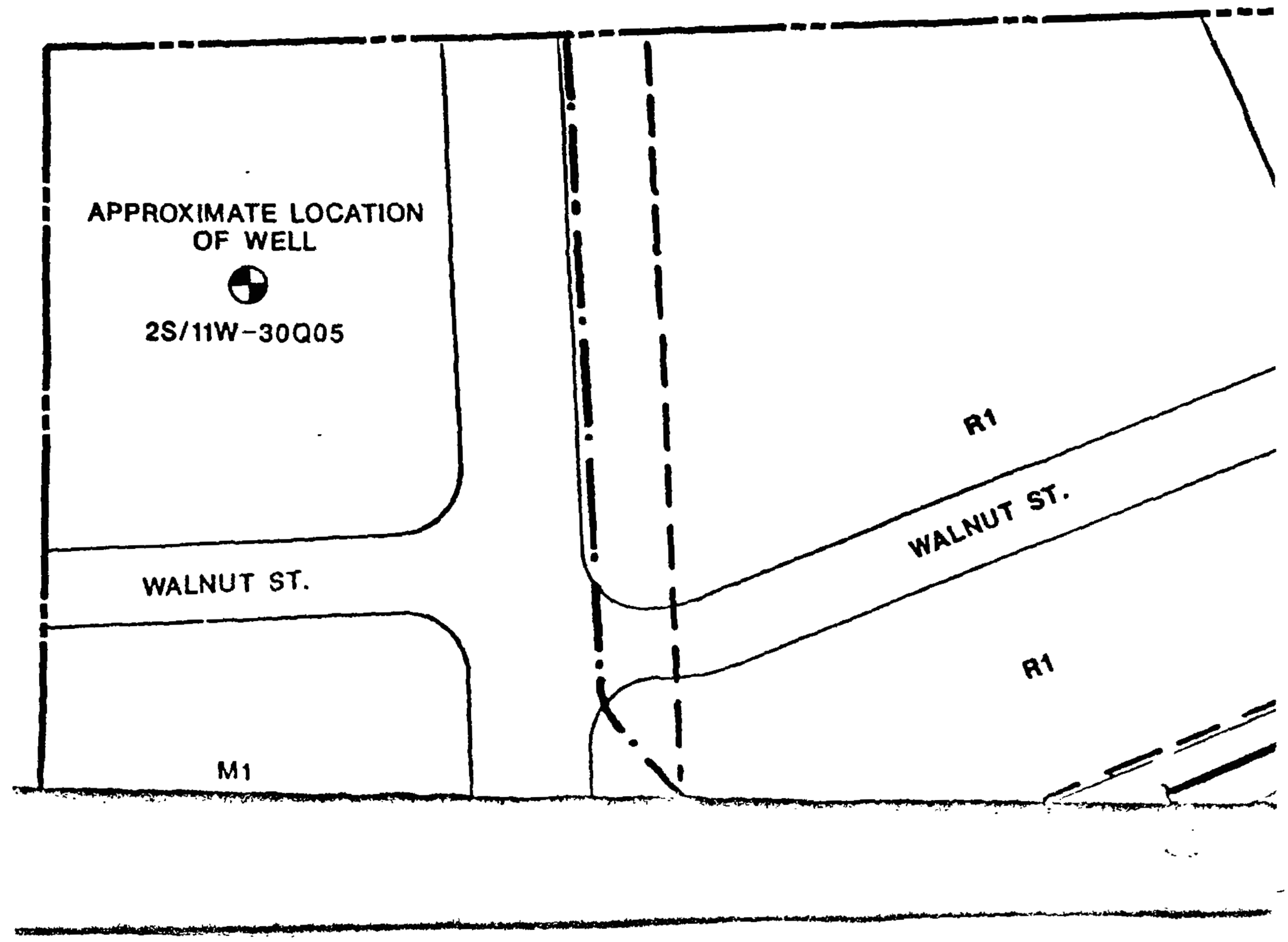
WITCO
ZONE C
RAILROAD RIGHT-OF-WAY
RAILROAD
RIGHT-OF-WAY
SCHNEE
MOORHEAD
CHEMICALS
4" SEWER LINE
SEWER
LIC
150
MANHOLE NO. 1
CA
ERT
DIVERSION
POND
BASF
WYANDOTTE
CORPORATION
DICE RD

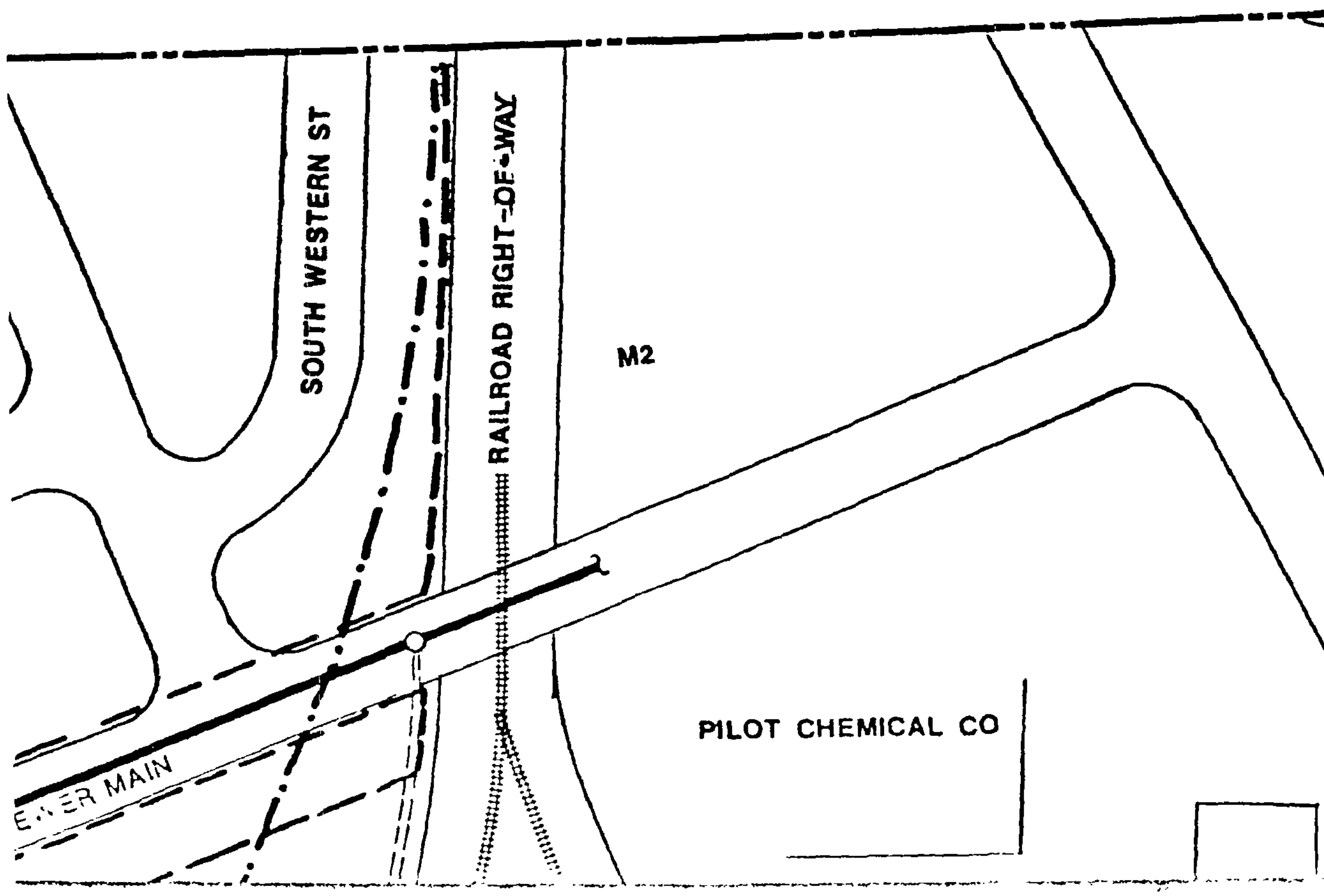

INC.
SIN
MED DRAINAGE DITCH



LOCATION PLAN

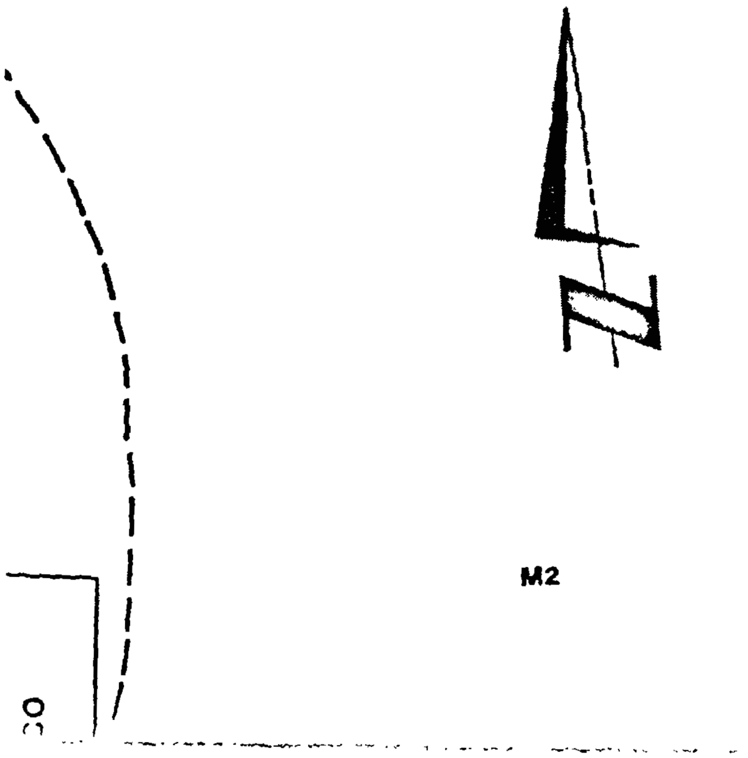


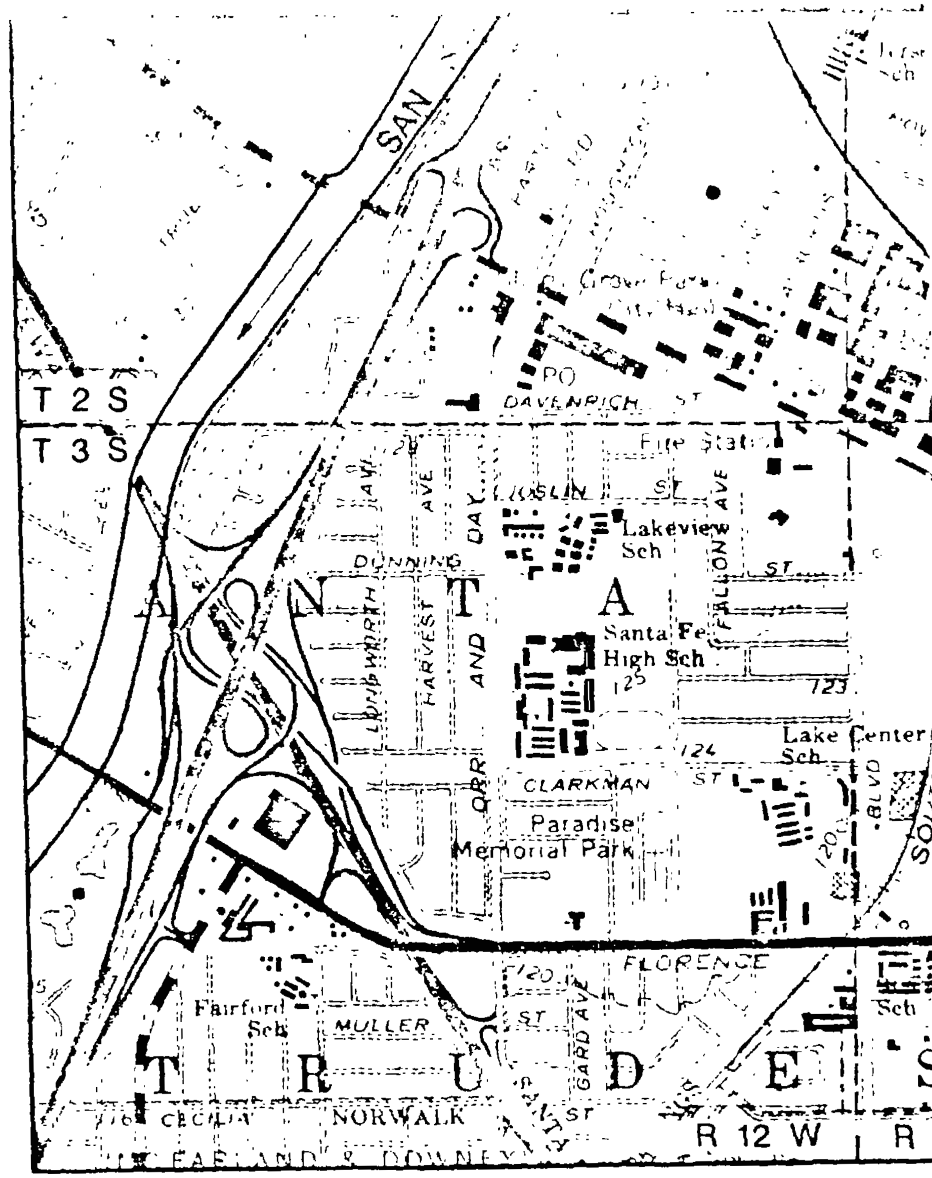

APPROXIMATE LOCATION
OF WELL
2S/11W-30Q05
R1
WALNUT ST.
WALNUT ST.
R1
M1


SOUTH WESTERN ST
RAILROAD RIGHT-OF-WAY
M2
PILOT CHEMICAL CO

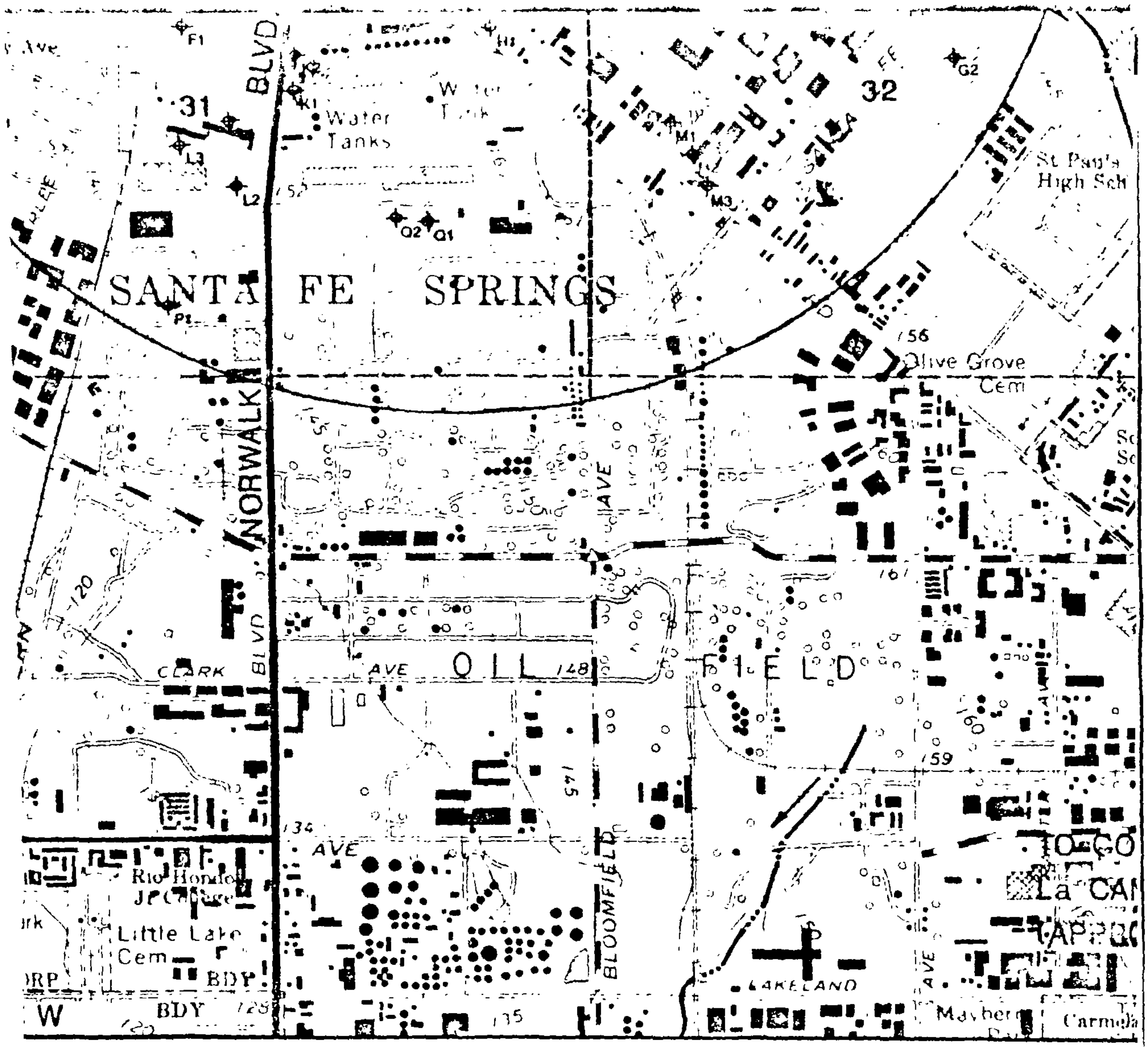
APPROXIMATE LOCATION OF WELL

2S/11W-29E05

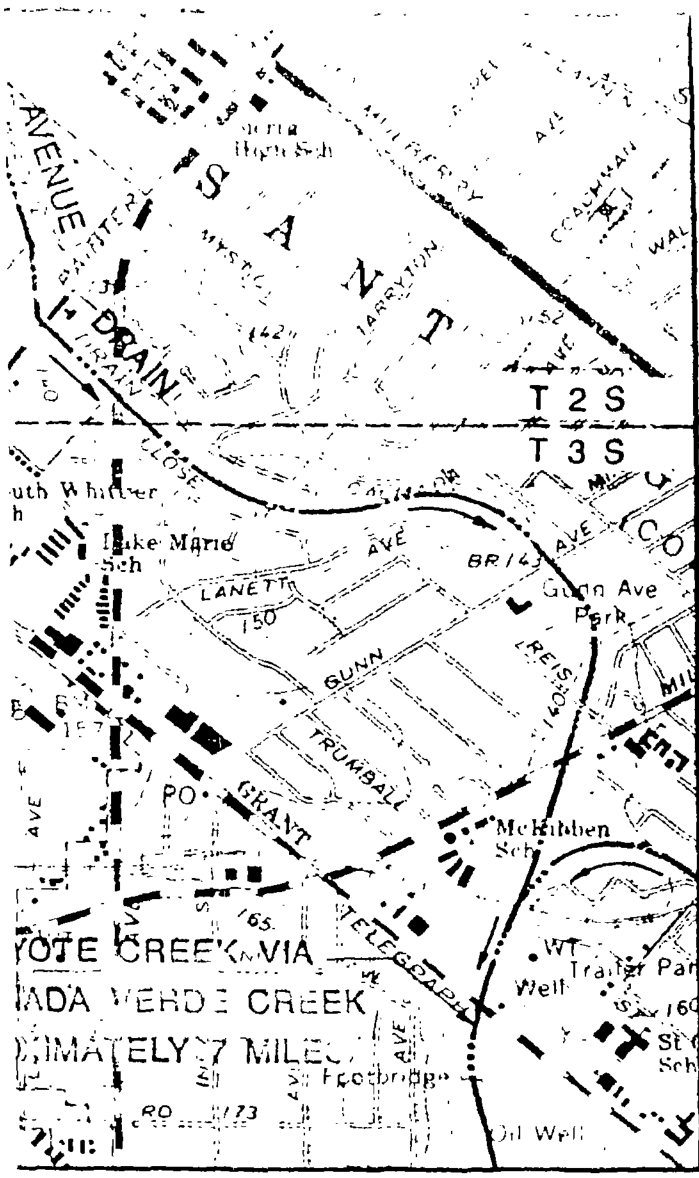




SAN
Lakeview Sch
Santa Fe High Sch
Lake Center Sch
Paradise Memorial Park
Fairford Sch
T 2 S
T 3 S
DAVENRICH ST
Fire Stat
JOSLIN ST
DUNNING
CLARKMAN ST
FLORENCE
MULLER
NORWALK
CECILIA
GARD AVE
FALLON AVE
HARVEST AVE
LONGWORTH AVE
ORR AND DAY
BLVD
Sch
PO
R 12 W
S A N T A
T R U D E S



SANTA FE SPRINGS
NORWALK BLVD
Water Tanks
Water Tank
31
32
St Paul's High Sch
Olive Grove Cem
CLARK AVE
OIL FIELD
BLOOMFIELD AVE
Rio Hondo Jr College
Little Lake Cem
BDY
LAKELAND
Mayberry
Carmela
La CAN



MODIFIED FROM: 1981 USGS MAP,
WHITTIER QUADRANGLE CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

LIGHT-DUTY

UNIMPROVED DIRT

5 INTERSTATE ROUTE

11 STATE ROUTE

WATER WELL - INACTIVE

WATER WELL- ACTIVE OR STATUS UKNOWN

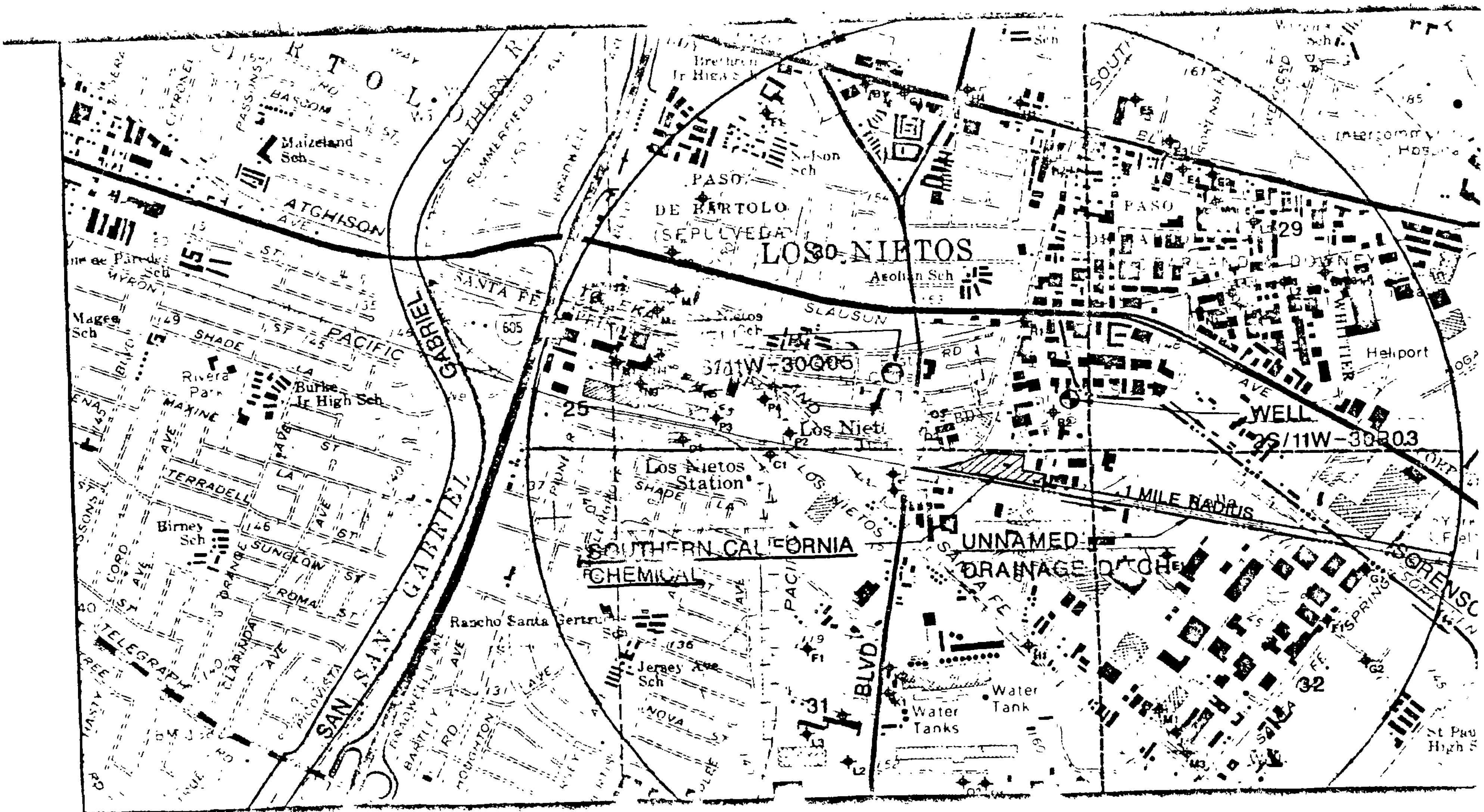
SOUTHERN CALIFORNIA CHEMICAL

REGIONAL PHYSIOGRAPHY

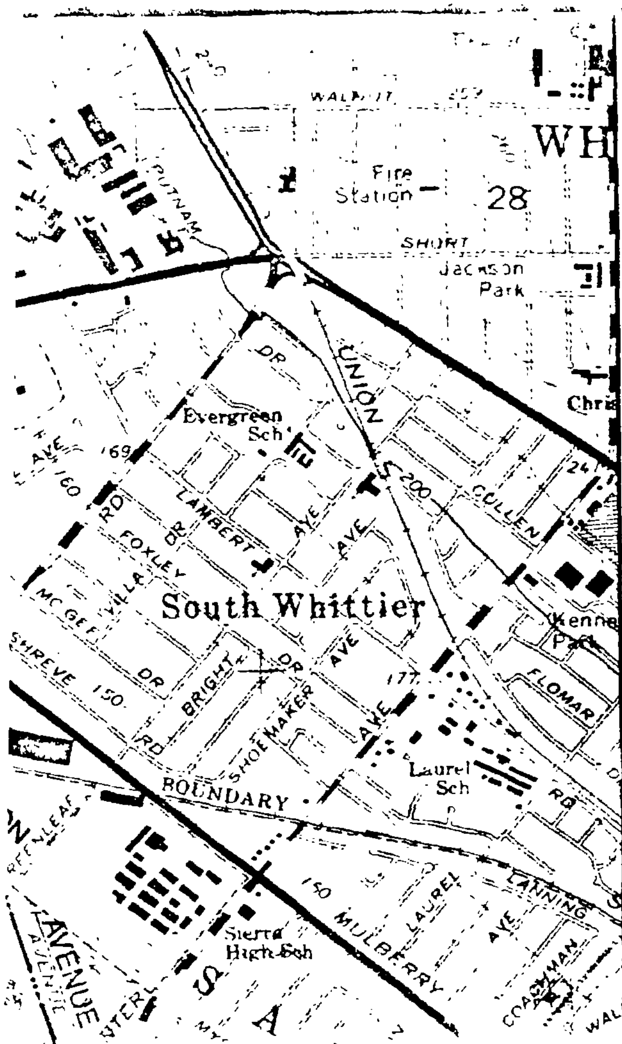
CAMP DRESSER & McKEE INC.
Irvine California
CDM

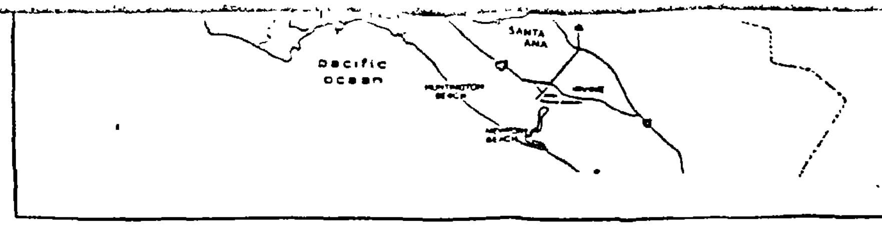
FIGURE 4

APRIL 6, 1990

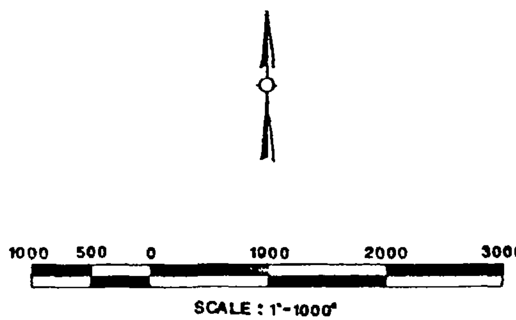


LOS NIETOS
PASO DE BARTOLO (SEPULVEDA)
S/11W-30Q05
WELL
2S/11W-30R03
1 MILE RADIUS
SOUTHERN CALIFORNIA CHEMICAL
UNNAMED DRAINAGE DITCH
SAN GABRIEL
ATCHISON
PACIFIC
SLAUSON
SANTA FE
Los Nietos Station
Maizeland Sch
Nelson Sch
Aeolian Sch
Burke Jr High Sch
Birney Sch
Rivera Park
Rancho Santa Gertrudes
Jersey Ave Sch
Water Tanks
Water Tank
Heliport
WHITTIER
SORENSON
25
29
30
31
32
605





LOCATION MAP



LEGEND

160 — 20 FOOT CONTOUR INTERVAL

155 — 5 FOOT CONTOUR INTERVAL

WATER COURSE

SURFACE WATER FLOW DIRECTION

PUBLIC WATER SUPPLY WELL

HEAVY-DUTY

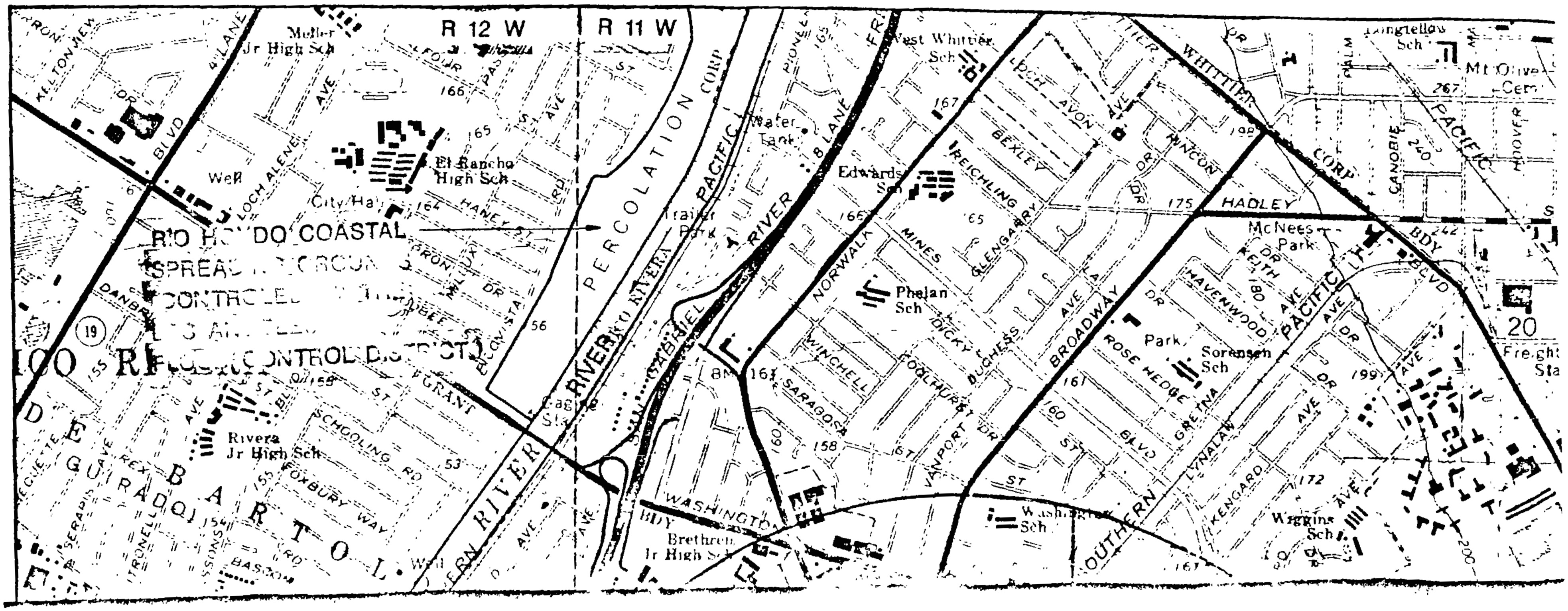
MEDIUM-DUTY

LIGHT-DUTY

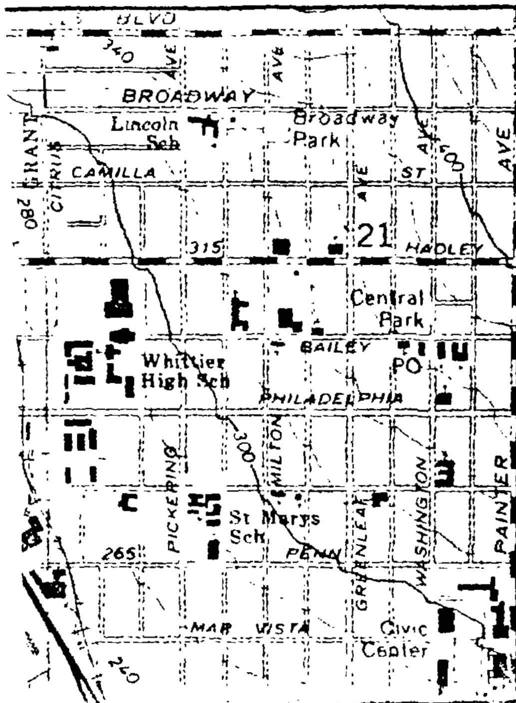
UNIMPROVED DIRT

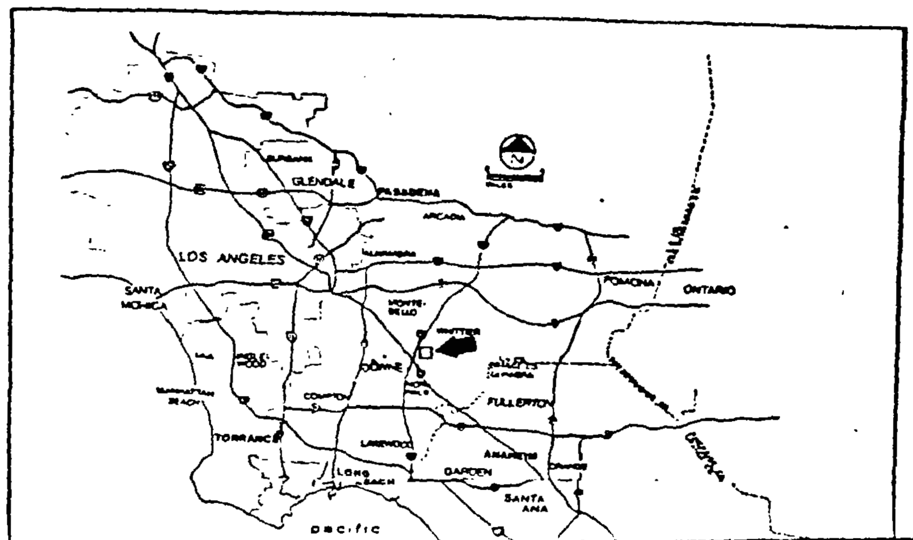
5 — INTERSTATE ROUTE

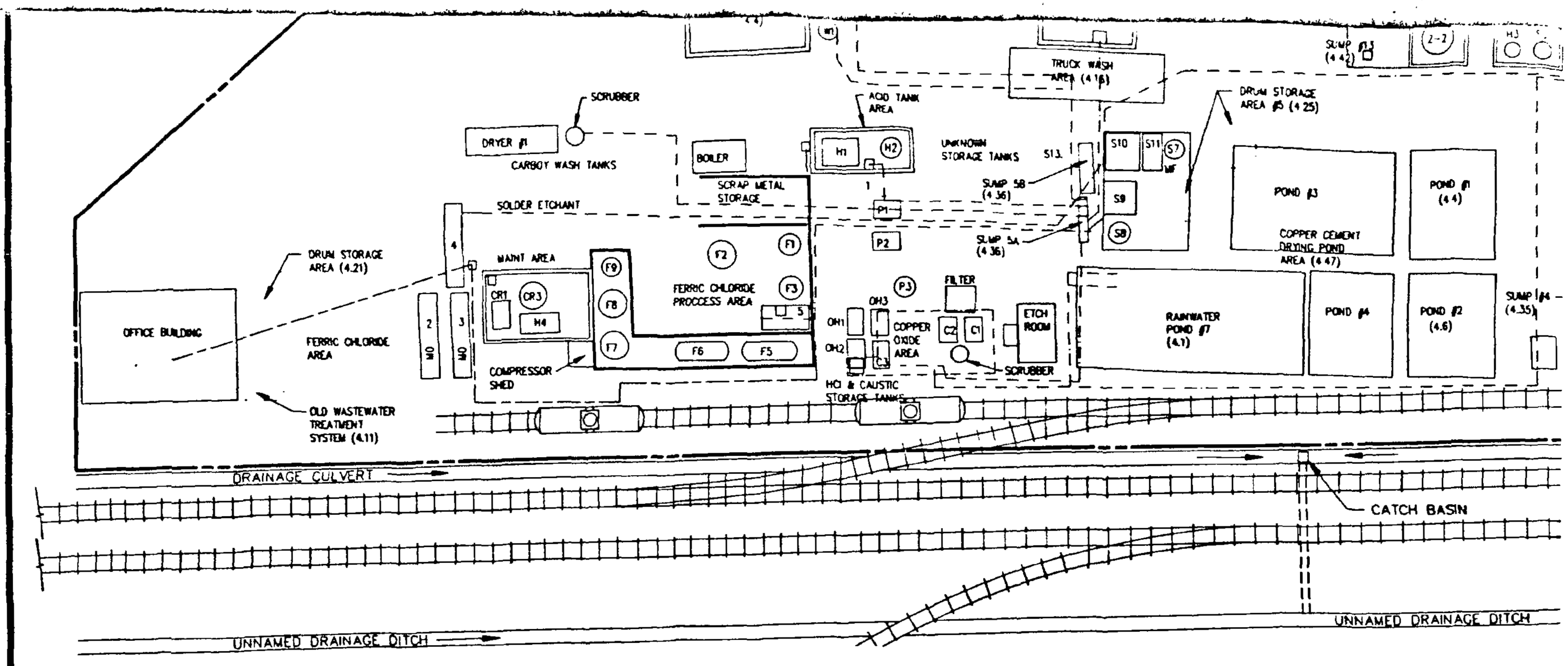
11 — STATE ROUTE



R 12 W
R 11 W
Meller Jr High Sch
El Rancho High Sch
City Hall
Well
PERCOLATION
CORP
Trailer Park
Water Tank
West Whittier Sch
Edwards Sch
Phelan Sch
McNees Park
Park
Sorensen Sch
Washington Sch
Wiggins Sch
Brethren Jr High Sch
Rivera Jr High Sch
Longfellow Sch
Mt Olive Cem
Freight Sta
Cagle Sta
WHITTIER
PACIFIC
HADLEY
NORWALK
BROADWAY
WASHINGTON
SOUTHERN
RIVER
SAN GABRIEL
RIO RIVERA
GRANT
SCHOOLING RD
FOXBURY WAY
BARTOLO
GUIRADO
LOCH ALENE
BEXLEY
REICHLING
GLENGARRY
MINES
WINCHELL
SARAGOSA
COOLHURST
VANPORT
DUCHESS
ROSE HEDGE
GRETNA
HAVENWOOD
KEITH
LYNALAN
KENGARD
RINCON
LOCH AVON
CANOBIE
HOOVER
PALM
DANBRIDGE
SERAPIS
REX
BASSON
KELTON VIEW
HANEY


BLVD
BROADWAY
Lincoln Sch
Broadway Park
GRANT
CITRUS
CAMILLA
ST
AVE
21
315
HADLEY
Central Park
BAILEY
PO
Whittier High Sch
PHILADELPHIA
MILTON
PICKERING
St Marys Sch
265
PENN
GREENLEAF
WASHINGTON
PAINTER
MAR VISTA
Civic Center


GLENDALE
PASADENA
LOS ANGELES
SANTA MONICA
POMONA
ONTARIO
DOWNEY
COMPTON
FULLERTON
TORRANCE
LAKEWOOD
LONG BEACH
ANAHEIM
GARDEN
SANTA ANA



NO.	DATE	REVISIONS	BY

PROJECT NO.	2279-111-A	DATE
DESIGNED BY	J.E.	10-18-89
DRAWN BY		
CHECKED BY		

ENGINEER ____________

REGISTRATION NO ________ DATE ________

BASED ON:

R.L. WOOD & ASSOCIATES, INC.
ENGINEERS

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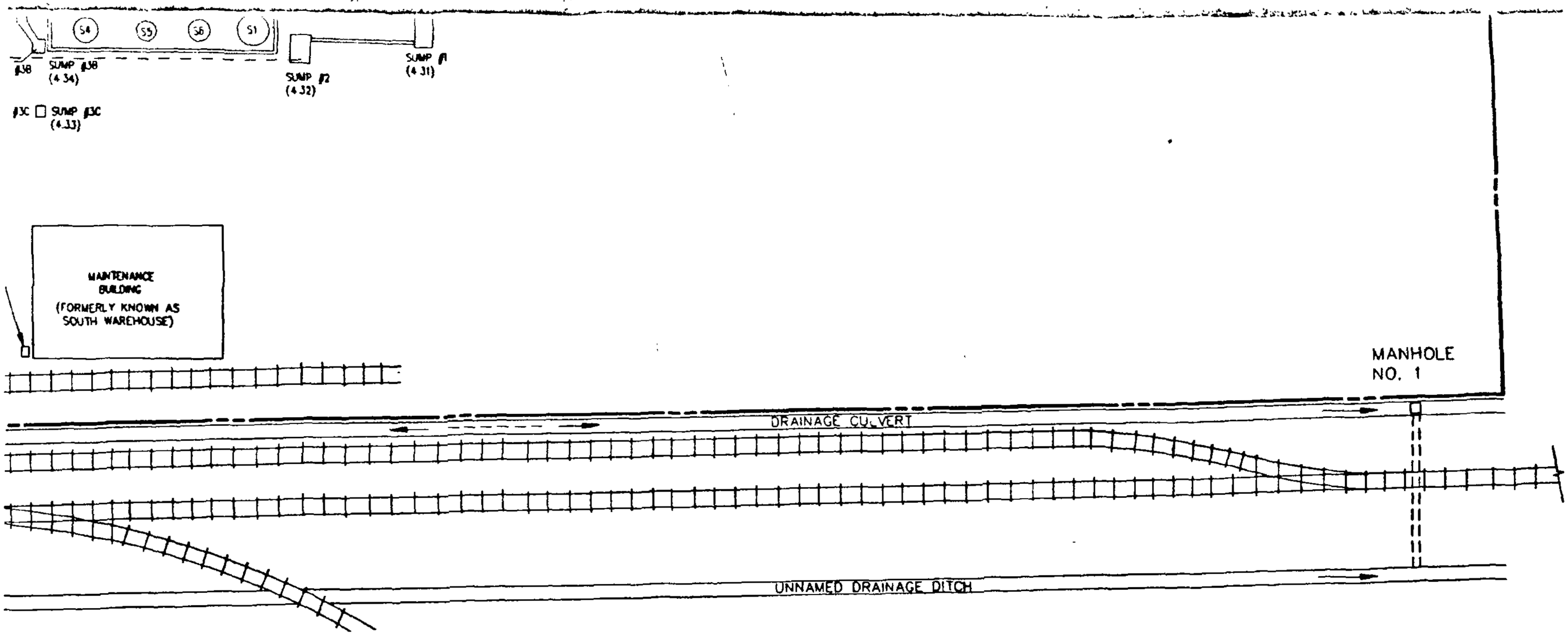
Huntington Beach, California, 92647

PREPARED BY:

CAMP DRESSER

18881 Von Karman Suite
Irvine, California 92715-1
(714) 752-5452



& McKEE INC.

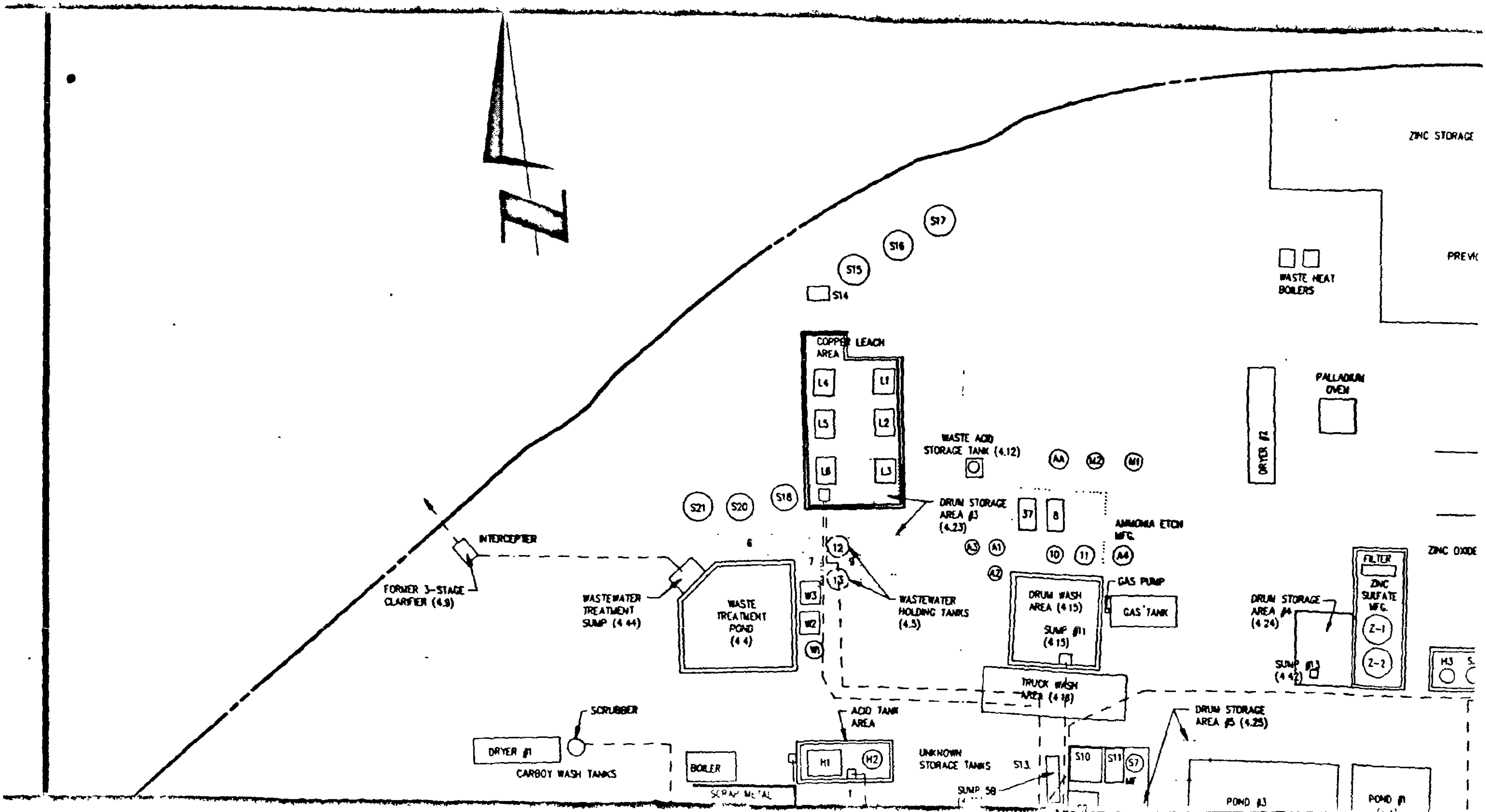
550
49

CDM
environmental engineers, scientists, planners & management consultants

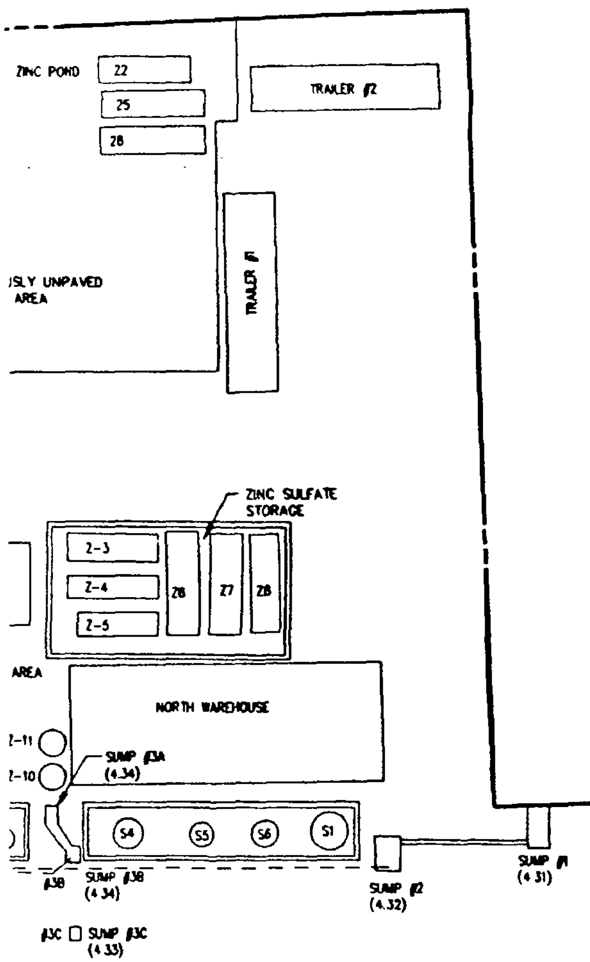
SOUTHERN CALIFORNIA CHEMICAL
8851 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA
CLIENT

HAZARDOUS & SOLID WASTE
TREATMENT STORAGE & DISPOSAL
PRIOR TO NOV. 19, 1980
PROJECT

SCALE 1"=3
JOB NUMBER 2279-
FIGU

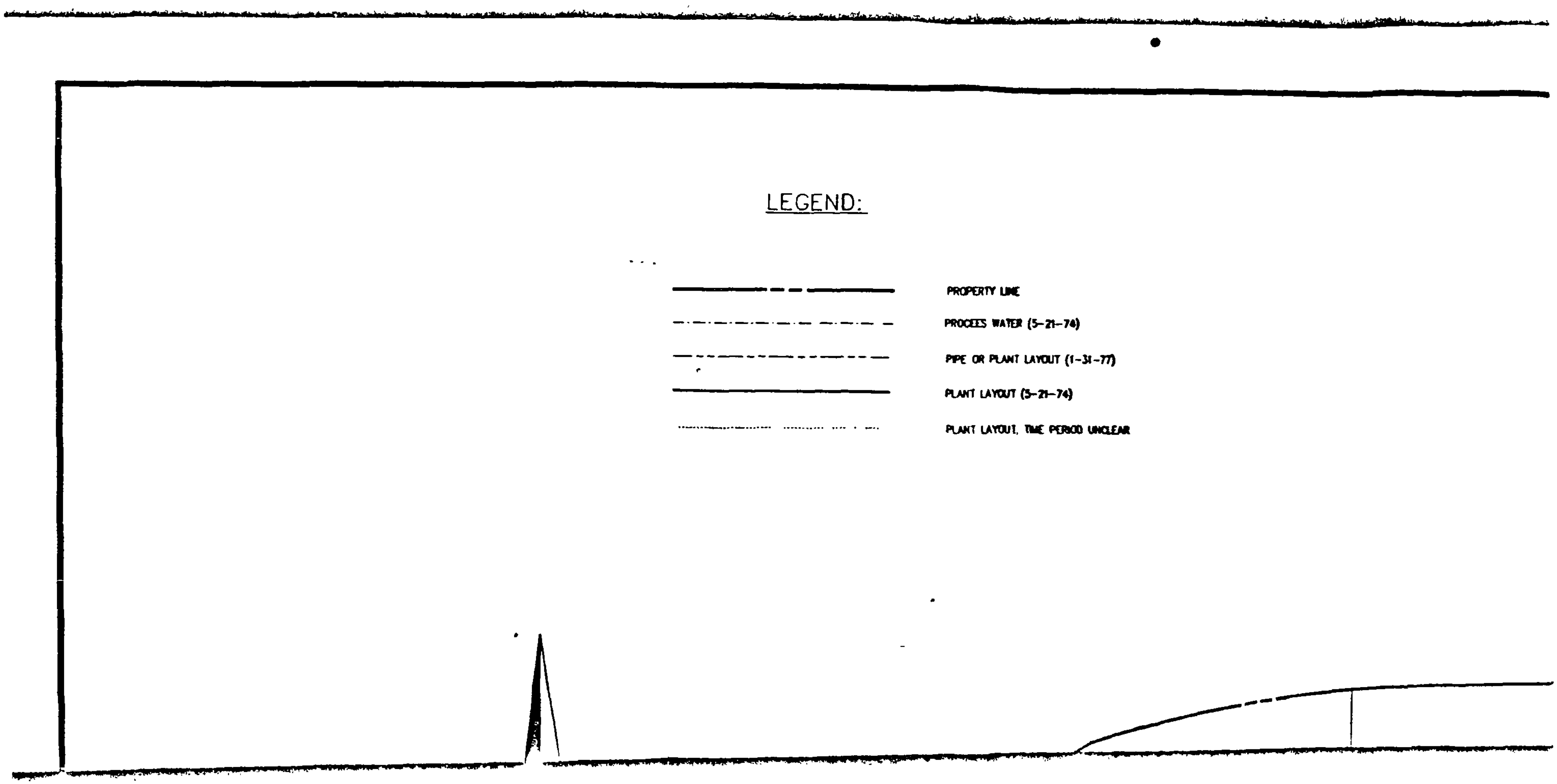


ZINC STORAGE
PREVI
WASTE HEAT BOILERS
S17
S16
S15
S14
COPPER LEACH AREA
L4
L1
L5
L2
L6
L3
PALLADIUM OVEN
DRYER #2
WASTE ACID STORAGE TANK (4.12)
AA
M2
M1
S21
S20
S18
DRUM STORAGE AREA #3 (4.23)
37
8
AMMONIA ETCH MFG.
INTERCEPTER
A3
A1
10
11
A4
ZINC OXIDE
12
13
A2
FORMER 3-STAGE CLARIFIER (4.9)
WASTEWATER TREATMENT SUMP (4.44)
WASTE TREATMENT POND (4.4)
W3
W2
W1
WASTEWATER HOLDING TANKS (4.5)
DRUM WASH AREA (4.15)
GAS PUMP
GAS TANK
SUMP #11 (4.15)
DRUM STORAGE AREA #4 (4.24)
FILTER
ZINC SULFATE MFG.
Z-1
Z-2
SUMP #13 (4.42)
H3
TRUCK WASH AREA (4.18)
SCRUBBER
ACID TANK AREA
DRUM STORAGE AREA #5 (4.25)
DRYER #1
CARBOY WASH TANKS
BOILER
H1
H2
UNKNOWN STORAGE TANKS
S13
S10
S11
S7
SUMP 58
SCRAP METAL
POND #3
POND #1



F-9	FERRIC CHLORIDE AREA	4,300 *
H-1	HYDROCHLORIC ACID	6,000
H-2	SULFURIC ACID	3,000
H-3	SULFURIC ACID STORAGE TANK	2,016 *
H-4	SULFURIC ACID STORAGE	4,100
L-1	COPPER AMMONIA/AMMONIA CARBONATE	1,830
L-2	COPPER AMMONIA/AMMONIA CARBONATE	1,830
L-3	COPPER AMMONIA/AMMONIA CARBONATE	1,830
L-4	COPPER AMMONIA/AMMONIA CARBONATE	3,670
L-5	COPPER AMMONIA/AMMONIA CARBONATE	3,670
L-6	COPPER AMMONIA/AMMONIA CARBONATE	3,670
TANK NO	CONTENTS	SIZE (Gal.)
M1	METHYLENE CHLORIDE	1,266
M2	METHYLENE CHLORIDE	1,266
OH1	CAUSTIC NaOH STORAGE	3,670
OH2	CAUSTIC NaOH STORAGE	3,677
OH3	AMMONIUM CHLORIDE	3,670

S-13	COPPER SULFATE MIX TANK	8,000
S-14	UNKNOWN STORAGE	3,670
S-15	UNKNOWN (STORAGE ?)	4,700
S-16	UNKNOWN (STORAGE ?)	2,590
S-17	UNKNOWN (STORAGE ?)	4,000
S-18	UNKNOWN (STORAGE ?)	3,000
S-20	UNKNOWN (STORAGE ?)	4,000
S-21	UNKNOWN (STORAGE ?)	4,000
W-1	NEUTRALIZATION TANK	?
W-2	ACID SOLUTION TANK	?
W-3	BASIC SOLUTION TANK	?
Z-1	ZINC SULFATE MIX TANK	5,922
Z-2	ZINC SULFATE MIX TANK	5,922
Z-3	ZINC SULFATE STORAGE AREA	10,500
Z-4	ZINC SULFATE STORAGE AREA	10,500
Z-5	ZINC SULFATE STORAGE AREA	10,500
Z-6	ZINC SULFATE STORAGE AREA	10,500
Z-7	ZINC SULFATE STORAGE AREA	10,500
Z-8	ZINC SULFATE STORAGE AREA	10,500
Z-10	ZINC OXIDE AREA	5,263
Z-11	ZINC OXIDE AREA	5,263


LEGEND:
PROPERTY LINE
PROCEES WATER (5-21-74)
PIPE OR PLANT LAYOUT (1-31-77)
PLANT LAYOUT (5-21-74)
PLANT LAYOUT, TIME PERIOD UNCLEAR

HAZARDOUS AND SOLID WASTE MANAGEMENT UNIT/PRODUCT STORAGE TANK SUMMARY

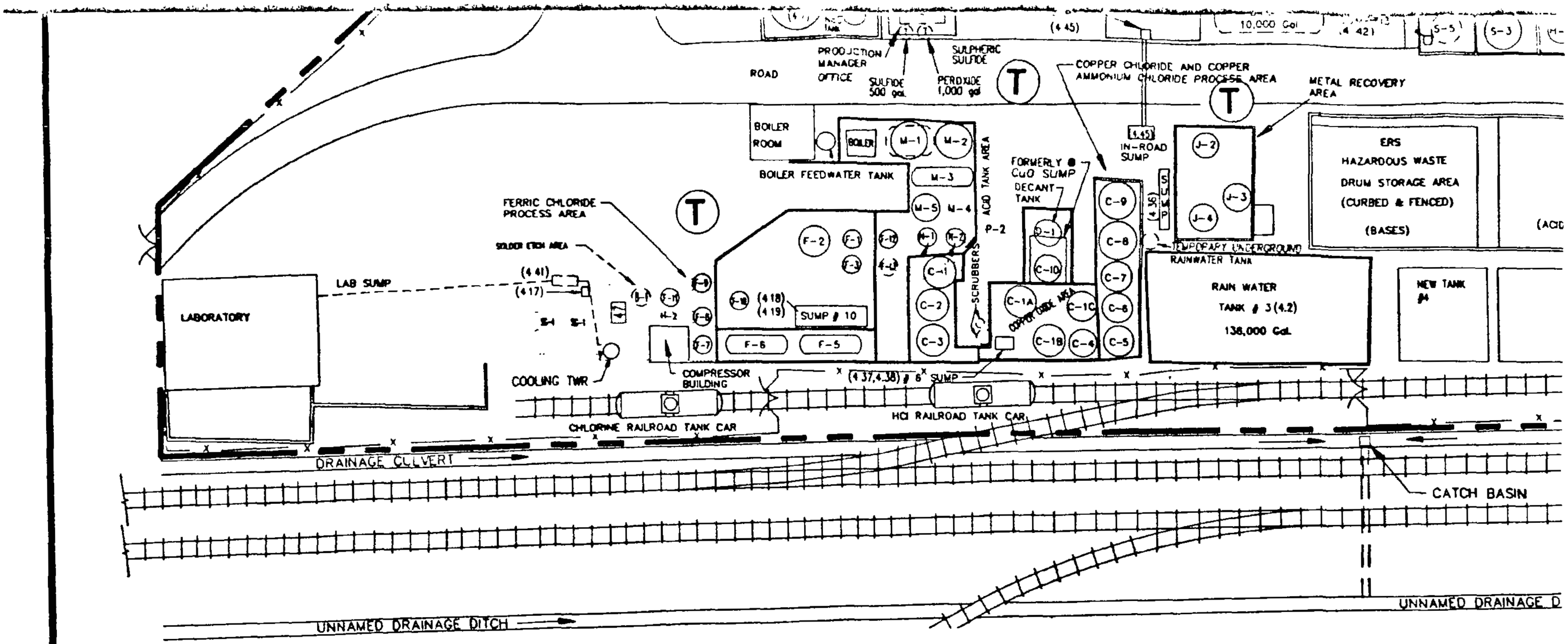
TANK NO	CONTENTS	SIZE (Gal.)
1*	HYDROCHLORIC ACID	?
2*	STEEL TANK	10,000
3*	STEEL TANK	10,000
4*	SUMP SYSTEM/CLARIFIER	?
5*	FILTER PRESS PIT	—
6*	WASTEWATER/RAIN WATER STORAGE	TEMPORARY ?
7*	SEMI-UNDERGROUND WASTEWATER STORAGE	?
8	UNKNOWN AMMONIA ETCH TANK AREA	3,670
9*	SEMI-UNDERGROUND WASTEWATER STORAGE	?
10*	AMMONIA ETCH STORAGE	2,878 ?
11*	AMMONIA ETCH STORAGE	2,010
12	WASTEWATER HOLDING TANK	12,000
13	WASTEWATER HOLDING TANK	12,000
22	ZINC STORAGE AREA	10,500
25	ZINC STORAGE AREA	14,300
28	ZINC STORAGE AREA	13,150
37	AMMONIA ETCH MIX TANK	3,600 OR 3,670

* NUMBERS DERIVED BY CDM FOR IDENTIFICATION PURPOSES. THESE NUMBERS DO NOT PERTAIN TO ACTUAL TANK IDENTIFICATION.

TANK NO	CONTENTS	SIZE (Gal.)
A-1	ALKALINE ETCH AREA	1,690
A-2	ALKALINE ETCH AREA	1,690
A-3	ALKALINE ETCH AREA	2,000
A-4	ALKALINE ETCH AREA	1,500
AA	ANHYDROUS AMMONIA	2,878
C1	COPPER OXIDE REACTOR	3,670
C2	COPPER OXIDE REACTOR	3,670
C3	AMMONIUM CHLORIDE	3,670
CR1	CHROME MIX TANK	3,670
CR2	CHROME STORAGE TANK	?
F-1	SPENT FERRIC CHLORIDE	8,500 OR 7,500 ?
F-2	FERRIC CHLORIDE AREA	4,350 ?
F-3	FERRIC CHLORIDE AREA	5,000 ?
F-5	FERRIC CHLORIDE AREA	6,000 ?
F-6	FERRIC CHLORIDE AREA	6,000
F-7	FERRIC CHLORIDE AREA	8,000
F-8	FERRIC CHLORIDE AREA	8,000
F-9	FERRIC CHLORIDE AREA	4,300 ?
H-1	HYDROCHLORIC ACID	6,000
H-2	[illegible]	[illegible]

TANK NO.	CONTENTS	SIZE (Gal.)
P1	SPENT COPPER AMMONIUM CHLORIDE	3,670
P2	SPENT COPPER AMMONIUM CHLORIDE	3,670
P3	SPENT COPPER AMMONIUM CHLORIDE	5,000
POND #1	COPPER CEMENT STORAGE	12,750
POND #2	COPPER CEMENT STORAGE	12,600
POND #3	COPPER CEMENT STORAGE	?
POND #4	COPPER CEMENT STORAGE	12,200 ?
POND #7	RAINWATER STORAGE	34,600
S-1	COPPER SULFATE STORAGE TANK	8,000
S-3	(UNKNOWN STORAGE ?)	2,760 ?
S-4	COPPER SULFATE STORAGE TANK	5,000
S-5	COPPER SULFATE STORAGE TANK	5,000
S-6	COPPER SULFATE STORAGE TANK	5,000
S-7	UNKNOWN (STORAGE ?)	4,000
S-8	UNKNOWN STORAGE	8,000
S-9	UNKNOWN (STORAGE ?)	6,000
S-10	UNKNOWN (STORAGE ?)	3,670
S-11	UNKNOWN (STORAGE ?)	[illegible]
S-13	COPPER SULFATE MIX TANK	8,000
S-14	UNKNOWN STORAGE	3,670
S-15	UNKNOWN (STORAGE ?)	[illegible]

ZINC POND 22



NO	DATE	REVISIONS	BY

PROJECT NO	2279-111-A	DATE
DESIGNED BY	J.E.	10-18-89
DRAWN BY		
CHECKED BY		

ENGINEER ____________

REGISTRATION NO ____________ DATE ______

BASED ON:

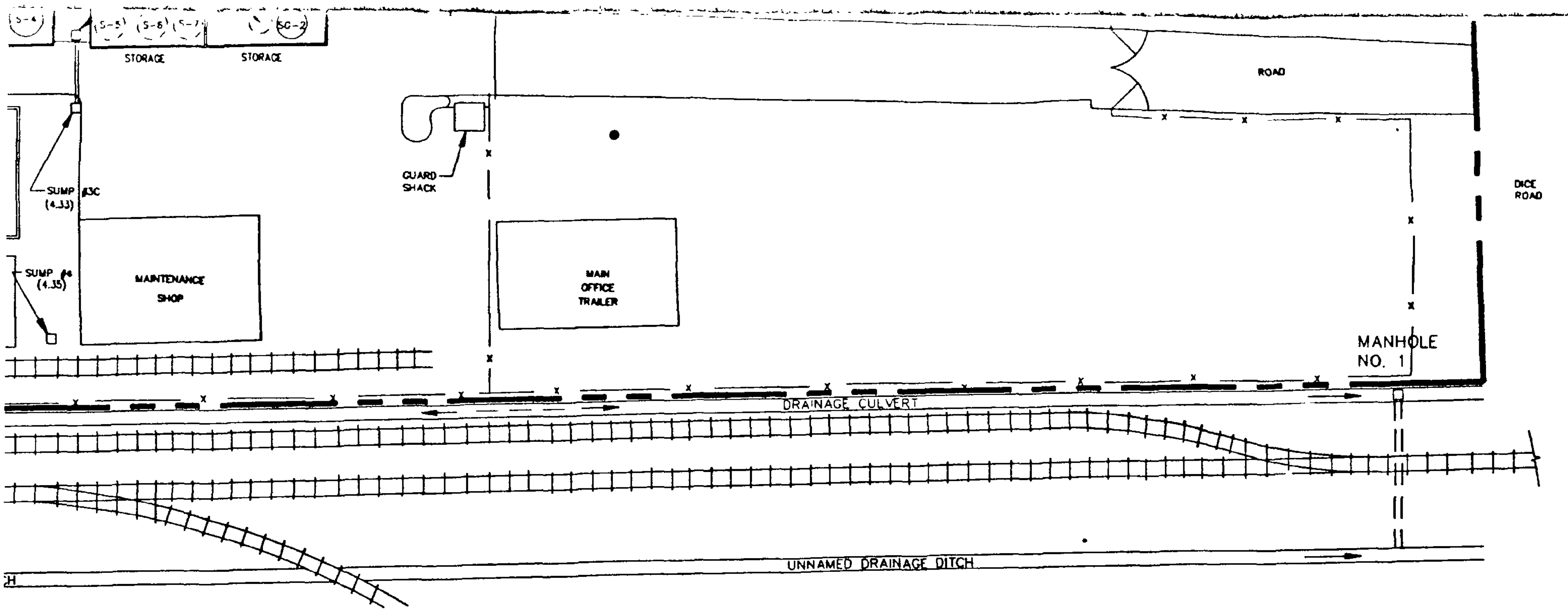
R.L. WOOD & ASSOCIATES, INC.
ENGINEERS

16321 Gothard Ave., Suite H (714) 848-6774
Huntington Beach, California, 92647

PREPARED BY:

CAMP DRESSEF

18881 Von Karman Suit
Irvine, California 92715-
(714) 752-5452



& McKEE INC.
650
49

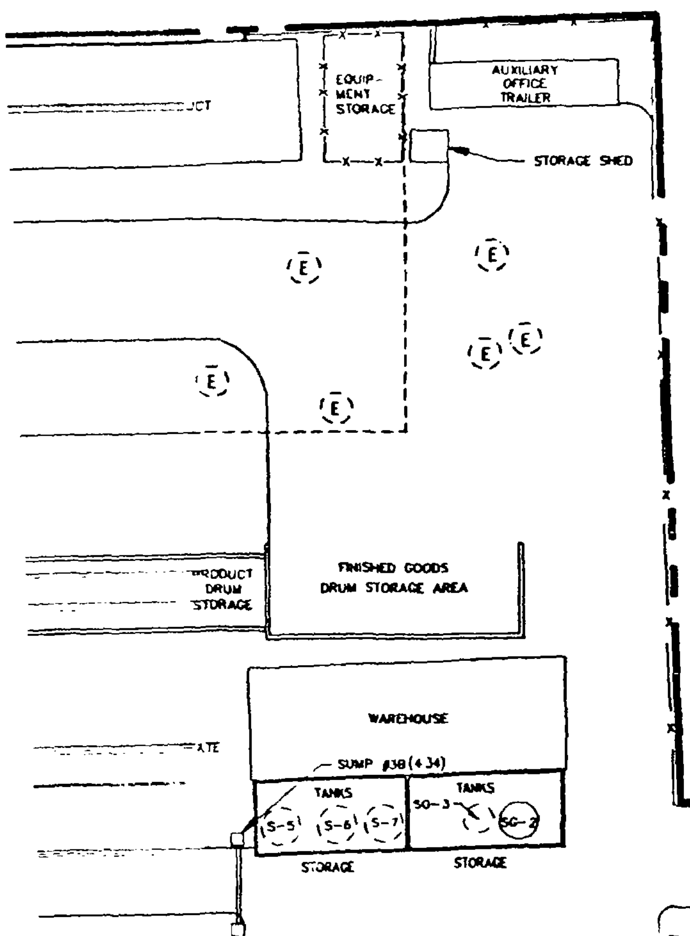
CDM
environmental engineers, scientists, planners & management consultants

SOUTHERN CALIFORNIA CHEMICAL
8851 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA
CLIENT

HAZARDOUS & SOLID WASTE
TREATMENT STORAGE & DISPOSAL
AFTER NOV. 19, 1980
PROJECT

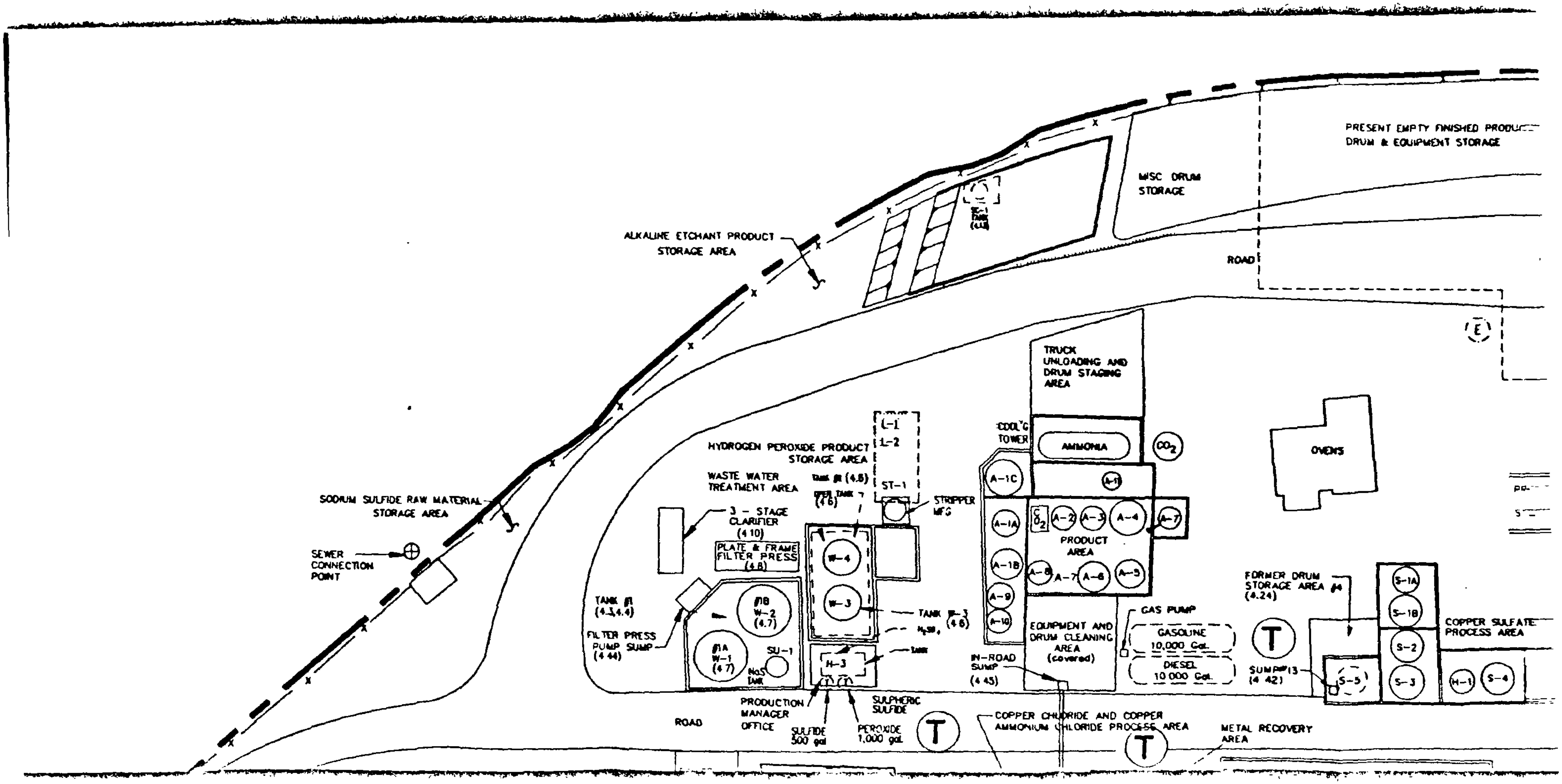
SCALE 1"=30.0'
JOB NUMBER 2279-111-A

FIGURE 7

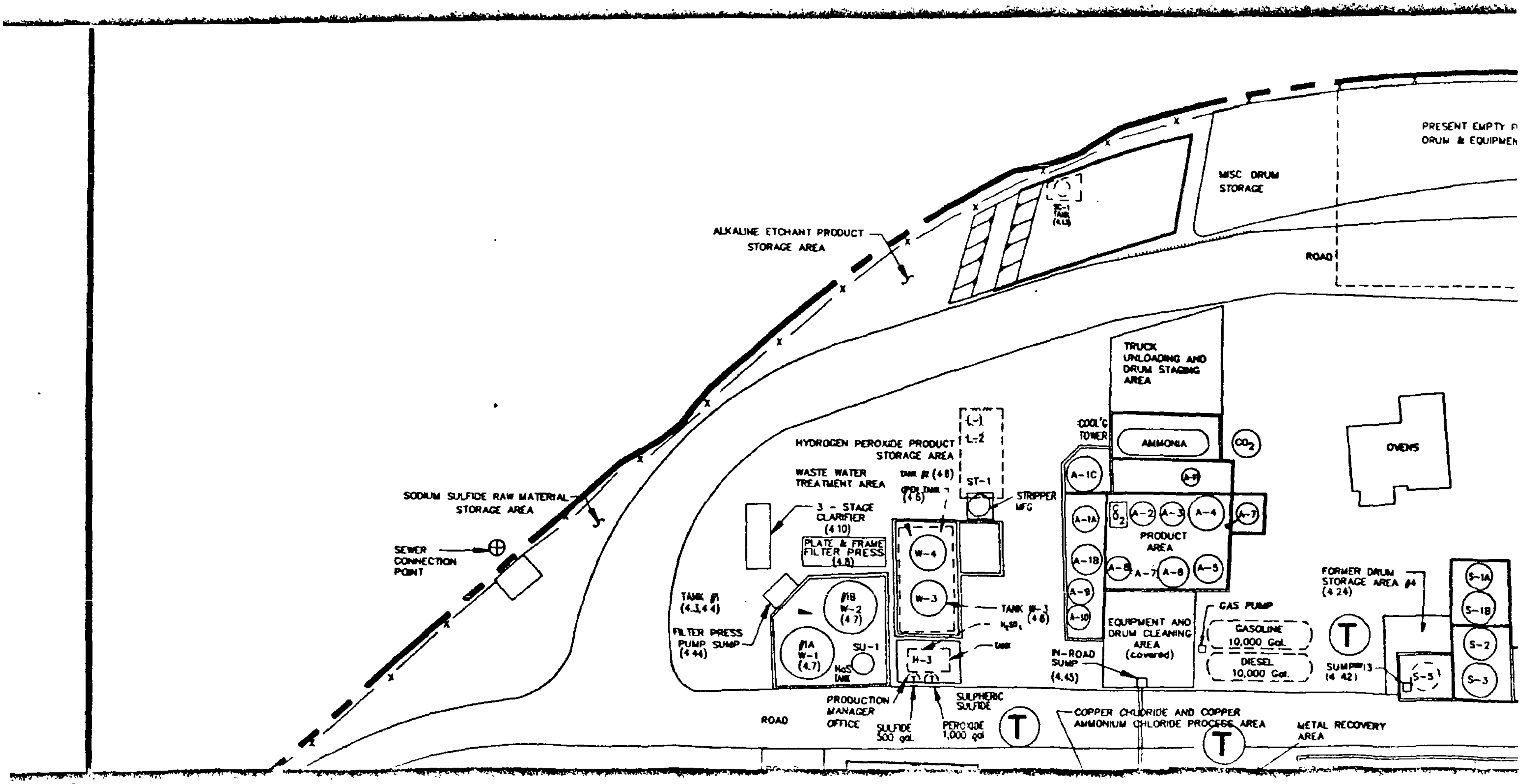


	C-2	AMMONIUM CHLORIDE SOLUTION	4000
	C-3	AMMONIUM CHLORIDE SOLUTION	4000
	C-4	SPENT AMMONIA ETCHANT	7500
	C-5	SPENT CUPRIC CHLORIDE	10000
	C-6	SPENT CUPRIC CHLORIDE	5600
	C-7	SPENT CUPRIC CHLORIDE	10000
	C-8	SPENT AMMONIA ETCHANT	15000
	C-9	SPENT AMMONIA ETCHANT	13000
	D-1		
	E	TANKS - EMPTY / SURPLUS TANKS	1500 - 4000
	F-1	SPENT FERRIC CHLORIDE	8500
	F-2	FERROUS CHLORIDE REACTOR	3000
	F-3	FERROUS CHLORIDE W/ SCRUBBER	4500
	F-5	CHLORINATOR	6000
	F-6	CHLORINATOR	6000
	F-7	FINISHED PRODUCT	7200
	F-8	FINISHED PRODUCT	7500
	F-9	FINISHED PRODUCT	2600
	F-10	FERROUS CHLORIDE STORAGE	5600
	F-11		
	F-12	SPENT FERRIC CHLORIDE	1700
	F-13		

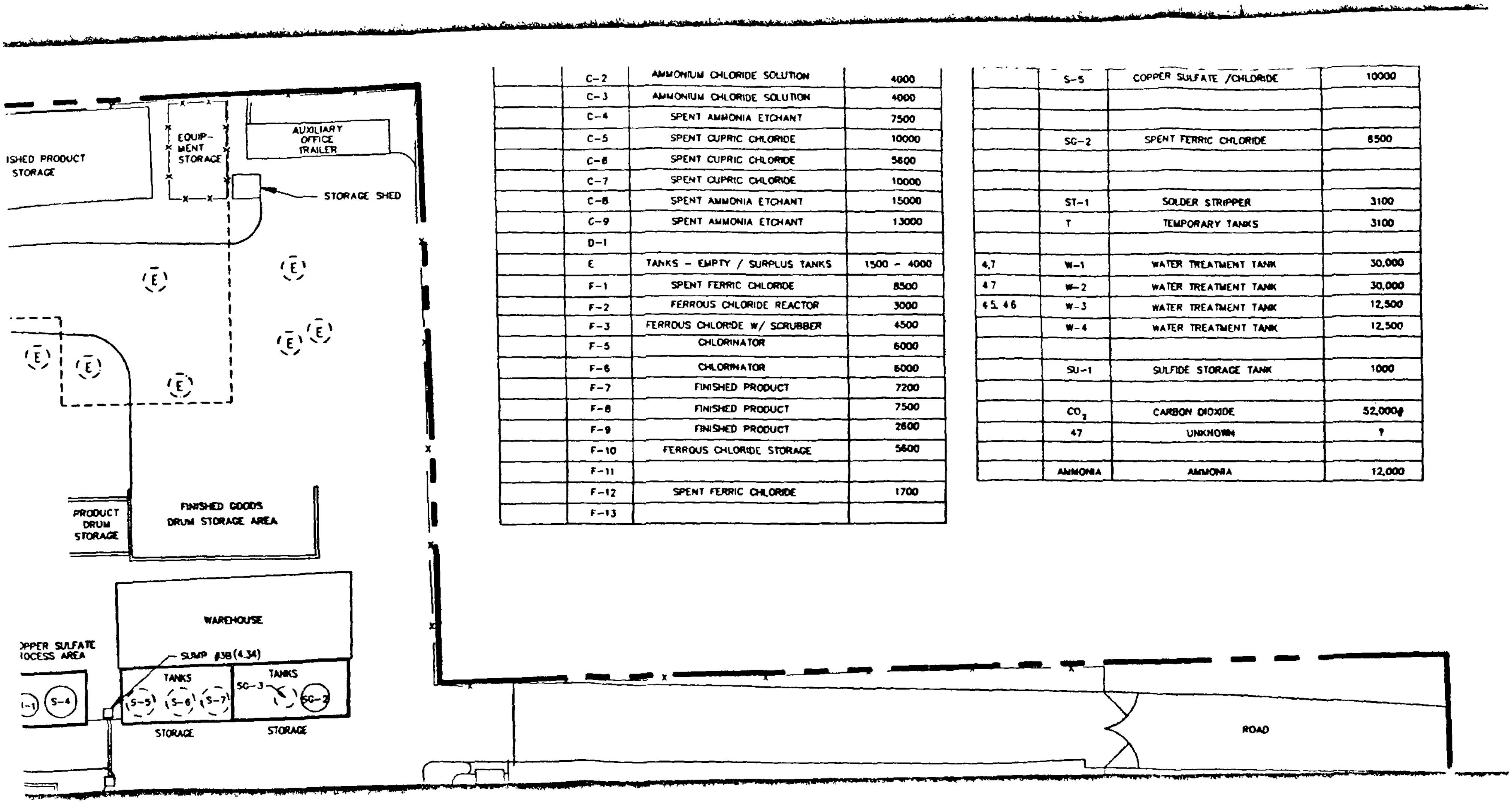
	S-5	COPPER SULFATE /CHLORIDE	10000
	SG-2	SPENT FERRIC CHLORIDE	6500
	ST-1	SOLDER STRIPPER	3100
	T	TEMPORARY TANKS	3100
4,7	W-1	WATER TREATMENT TANK	30,000
47	W-2	WATER TREATMENT TANK	30,000
45, 48	W-3	WATER TREATMENT TANK	12,500
	W-4	WATER TREATMENT TANK	12,500
	SU-1	SULFIDE STORAGE TANK	1000
	CO_2	CARBON DIOXIDE	52,000#
	47	UNKNOWN	?
	AMMONIA	AMMONIA	12,000



PRESENT EMPTY FINISHED PRODUCT DRUM & EQUIPMENT STORAGE
MISC DRUM STORAGE
ROAD
ALKALINE ETCHANT PRODUCT STORAGE AREA
TRUCK UNLOADING AND DRUM STAGING AREA
E
COOL'G TOWER
AMMONIA
CO_2
OVENS
HYDROGEN PEROXIDE PRODUCT STORAGE AREA
WASTE WATER TREATMENT AREA
L-1
L-2
ST-1
STRIPPER MFG
A-1C
A-11
A-1A
A-1B
A-9
A-10
A-2
A-3
A-4
A-7
A-8
A-6
A-5
PRODUCT AREA
SODIUM SULFIDE RAW MATERIAL STORAGE AREA
SEWER CONNECTION POINT
3 - STAGE CLARIFIER (4.10)
PLATE & FRAME FILTER PRESS (4.8)
W-4
W-3
TANK #1 (4.3,4.4)
#1B W-2 (4.7)
#1A W-1 (4.7)
SU-1
FILTER PRESS PUMP SUMP (4.44)
TANK #-3 (4.6)
H-3
EQUIPMENT AND DRUM CLEANING AREA (covered)
GAS PUMP
GASOLINE 10,000 Gal.
DIESEL 10,000 Gal.
FORMER DRUM STORAGE AREA #4 (4.24)
S-1A
S-1B
S-2
S-3
S-4
S-5
H-1
COPPER SULFATE PROCESS AREA
SUMP #13 (4.42)
IN-ROAD SUMP (4.43)
T
PRODUCTION MANAGER OFFICE
SULFIDE 500 gal
PEROXIDE 1,000 gal
SULPHERIC SULFIDE
ROAD
COPPER CHLORIDE AND COPPER AMMONIUM CHLORIDE PROCESS AREA
METAL RECOVERY AREA



PRESENT EMPTY
DRUM & EQUIPMEN
MISC DRUM
STORAGE
ROAD
ALKALINE ETCHANT PRODUCT
STORAGE AREA
TRUCK
UNLOADING AND
DRUM STAGING
AREA
COOL'G
TOWER
AMMONIA
CO_2
OVENS
HYDROGEN PEROXIDE PRODUCT
STORAGE AREA
WASTE WATER
TREATMENT AREA
ST-1
STRIPPER
MFG
SODIUM SULFIDE RAW MATERIAL
STORAGE AREA
3 - STAGE
CLARIFIER
(4.10)
PLATE & FRAME
FILTER PRESS
(4.8)
SEWER
CONNECTION
POINT
A-1C
A-1A
A-1B
A-2
A-3
A-4
A-7
A-5
A-6
PRODUCT
AREA
FORMER DRUM
STORAGE AREA #4
(4.24)
S-1A
S-1B
S-2
S-3
S-5
TANK #1
(4.3,4.4)
W-4
W-3
W-2
W-1
TANK #-3
(4.6)
FILTER PRESS
PUMP SUMP
(4.44)
SU-1
H-3
EQUIPMENT AND
DRUM CLEANING
AREA
(covered)
GAS PUMP
GASOLINE
10,000 Gal.
DIESEL
10,000 Gal.
IN-ROAD
SUMP
(4.45)
SUMP
(4.42)
PRODUCTION
MANAGER
OFFICE
SULPHERIC
SULFIDE
ROAD
SULFIDE
500 gal.
PEROXIDE
1,000 gal
COPPER CHLORIDE AND COPPER
AMMONIUM CHLORIDE PROCESS AREA
METAL RECOVERY
AREA



	C-2	AMMONIUM CHLORIDE SOLUTION	4000
	C-3	AMMONIUM CHLORIDE SOLUTION	4000
	C-4	SPENT AMMONIA ETCHANT	7500
	C-5	SPENT CUPRIC CHLORIDE	10000
	C-6	SPENT CUPRIC CHLORIDE	5600
	C-7	SPENT CUPRIC CHLORIDE	10000
	C-8	SPENT AMMONIA ETCHANT	15000
	C-9	SPENT AMMONIA ETCHANT	13000
	D-1		
	E	TANKS – EMPTY / SURPLUS TANKS	1500 – 4000
	F-1	SPENT FERRIC CHLORIDE	8500
	F-2	FERROUS CHLORIDE REACTOR	3000
	F-3	FERROUS CHLORIDE W/ SCRUBBER	4500
	F-5	CHLORINATOR	6000
	F-6	CHLORINATOR	6000
	F-7	FINISHED PRODUCT	7200
	F-8	FINISHED PRODUCT	7500
	F-9	FINISHED PRODUCT	2600
	F-10	FERROUS CHLORIDE STORAGE	5600
	F-11		
	F-12	SPENT FERRIC CHLORIDE	1700
	F-13		

	S-5	COPPER SULFATE /CHLORIDE	10000
	SG-2	SPENT FERRIC CHLORIDE	6500
	ST-1	SOLDER STRIPPER	3100
	T	TEMPORARY TANKS	3100
4,7	W-1	WATER TREATMENT TANK	30,000
4 7	W-2	WATER TREATMENT TANK	30,000
45, 46	W-3	WATER TREATMENT TANK	12,500
	W-4	WATER TREATMENT TANK	12,500
	SU-1	SULFIDE STORAGE TANK	1000
	CO_2	CARBON DIOXIDE	52,000#
	47	UNKNOWN	?
	AMMONIA	AMMONIA	12,000

TANK SCHEDULE AS OF 5/22/85

UNIT No	TANK No	YEAR	PRODUCT	CAPACITY (Gal.)
	A-7	85	5% HCL SOLUTION	3500
412	B-1	85	CHROME SULFURIC ACID	3000
	H-2	85	SULFURIC ACID	4130
	H-3	85	SULFURIC ACID	3000
	L-1	85	CUPRIC AMMONIUM CHLORIDE	2695
	L-2	85	CUPRIC AMMONIUM CHLORIDE	1960
	M-4	85	MURIATIC ACID	8000
	P-2	85	EMPTY	3700
	S-5	85	COPPER SULPHATE	3500
	S-6	85	COPPER SULPHATE	4000
	S-7	85	COPPER SULPHATE	3000
	SG-1	85	FERRIC CHLORIDE	15000
	SG-3	85	SPENT FERRIC CHLORIDE	3000
	SG-4	85	FERRIC CHLORIDE	15000
413	SC-1	85	SPENT CHROME ETCHANT	4450

LEGEND

T — TRUCK LOADING AND UNLOADING

PROPERTY LINE

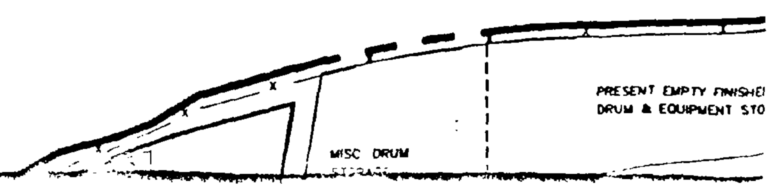
FENCE LINE

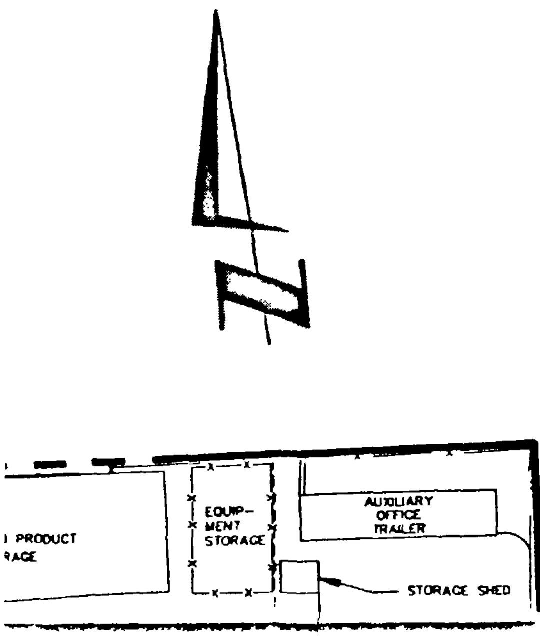
INSTALLED EQUIP AS OF 8-12-1988

INSTALLED EQUIP AS OF 12-17-1985

INSTALLED EQUIP AS OF 8-1-1984

CURRENTLY INSTALLED EQUIPMENT

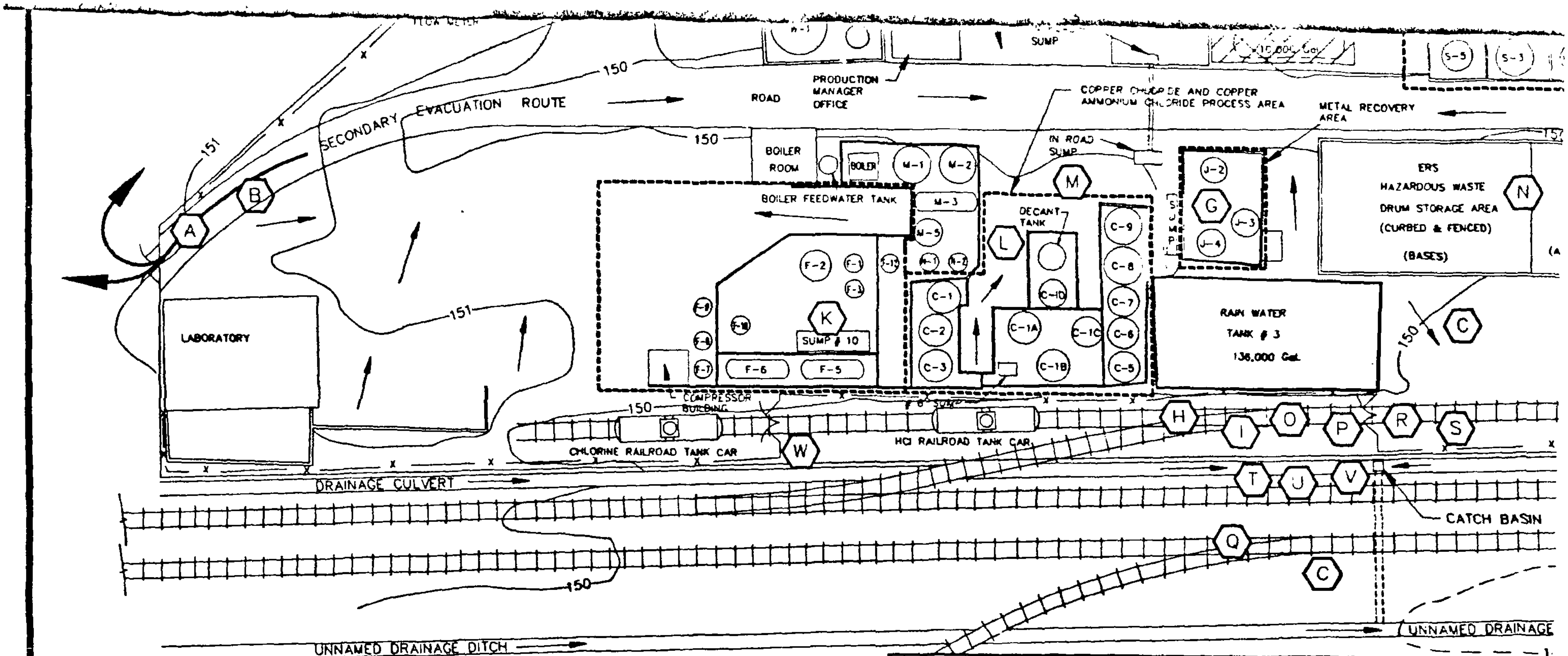




HAZARDOUS AND SOLID WASTE MANAGEMENT UNIT/PRODUCT STORAGE TANK SUMMARY

UNIT No	TANK No.	PRODUCT	CAPACITY (Gal.)
	A-1A	10% AQUA AMMONIA SOLUTION	4851
	A-1B	10% AQUA AMMONIA SOLUTION	6000
	A-1C	10% AQUA AMMONIA SOLUTION	6000
	A-2	10% AQUA AMMONIA SOLUTION	10000
	A-3	10% AQUA AMMONIA SOLUTION	5800
	A-4	10% AQUA AMMONIA SOLUTION	13000
	A-5	10% AQUA AMMONIA SOLUTION	9500
	A-6	10% AQUA AMMONIA SOLUTION	6000
	A-7	3% HCL SOLUTION	3000
	A-8	SCRUBBER & PUMP TANK	6000
	A-9	AMMONIUM CHLORIDE SOLUTION	12000
	A-10	AMMONIUM CHLORIDE SOLUTION	4500
	A-11	10% AMMONIUM HYDROXIDE SOLUTION	10000
	C-1	AMMONIA RECOVERY	6000
	C-1A	REACTOR	6000
	C-1B	REACTOR	6000
	C-1C	REACTOR	6000
	C1-D	REACTOR	6800
	C-2	AMMONIUM CHLORIDE SOLUTION	4000
	C-3	AMMONIUM CHLORIDE SOLUTION	4000
	C-4	SPENT AMMONIA ETCHANT	7500
	C-5	SPENT CUPRIC CHLORIDE	10000
	C-6	SPENT CUPRIC CHLORIDE	5600
	C-7	SPENT CUPRIC CHLORIDE	10000
	C-8	SPENT AMMONIA ETCHANT	15000

UNIT No	TANK No.	PRODUCT	CAPACITY (Gal.)
	H-1	SULFURIC ACID	5000
	J-2	COPPER SULFATE SOLUTION	3300
	J-3	METAL TREATMENT MIX TANK	5900
	J-4	EMPTY	5400
	M-1	MURIATIC ACID	12000
	M-2	MURIATIC ACID	12000
	M-3	MURIATIC ACID	6000
	M-5	MURIATIC ACID	10000
	N-1	CAUSTIC SODA SOLUTION	4800
	N-2	CAUSTIC SODA SOLUTION	5200
	S-1A	REACTOR	7000
	S-1B	REACTOR	7500
424	S-2	STORAGE	6000
424	S-3	STORAGE	12000
	S-4	STORAGE	12000
	S-5	COPPER SULFATE /CHLORIDE	10000
	SG-2	SPENT FERRIC CHLORIDE	6500
	ST-1	SOLDER STRIPPER	3100



NO.	DATE	REVISIONS	BY

PROJECT NO	2279-111-A	DATE
DESIGNED BY	J.E.	10-18-89
DRAWN BY		
CHECKED BY		
ENGINEER		
REGISTRATION NO		DATE

BASED ON:

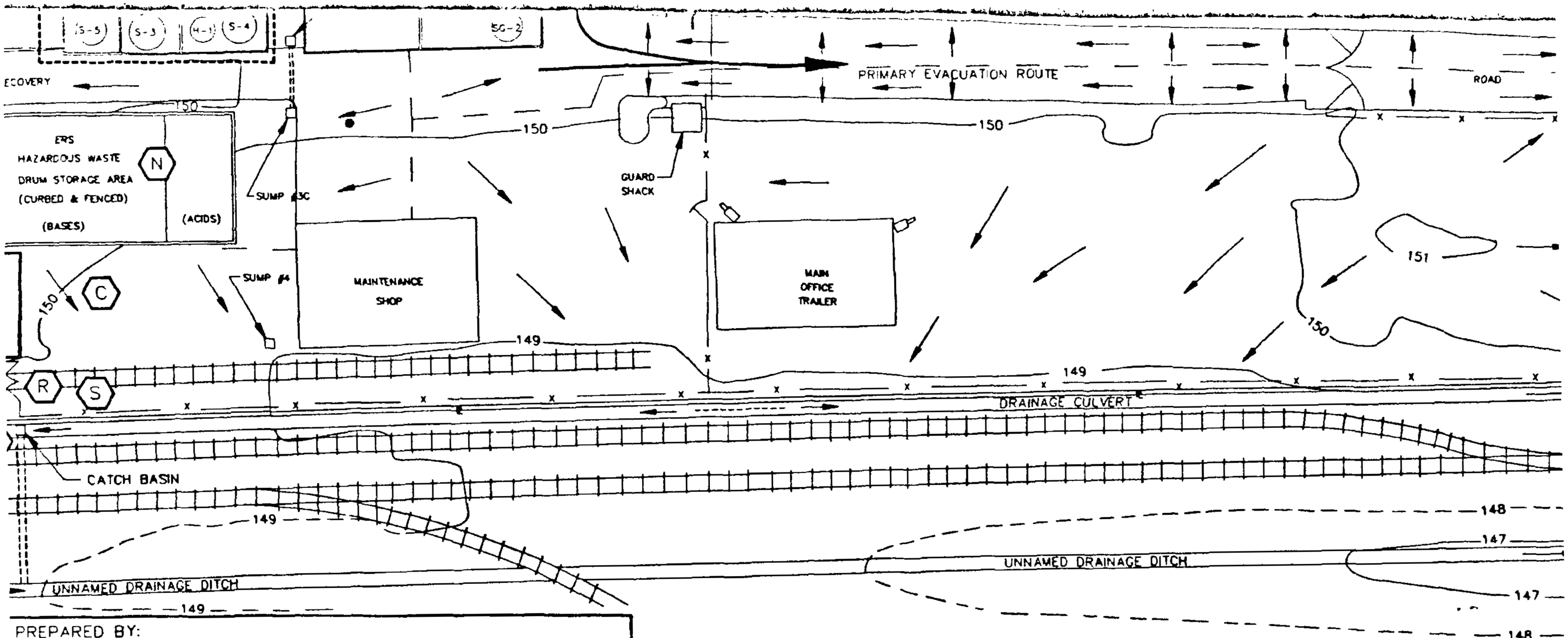
R.L. WOOD & ASSOCIATES, INC.
ENGINEERS

16321 Gothard Ave., Suite H (714) 848-6774
Huntington Beach, California, 92647

PREPARED BY:

CAMP DRESSER

18881 Von Karman Suit
Irvine, California 92715-
(714) 752-5452



PREPARED BY:

CAMP DRESSER & McKEE INC.

18881 Von Karman Suite 650
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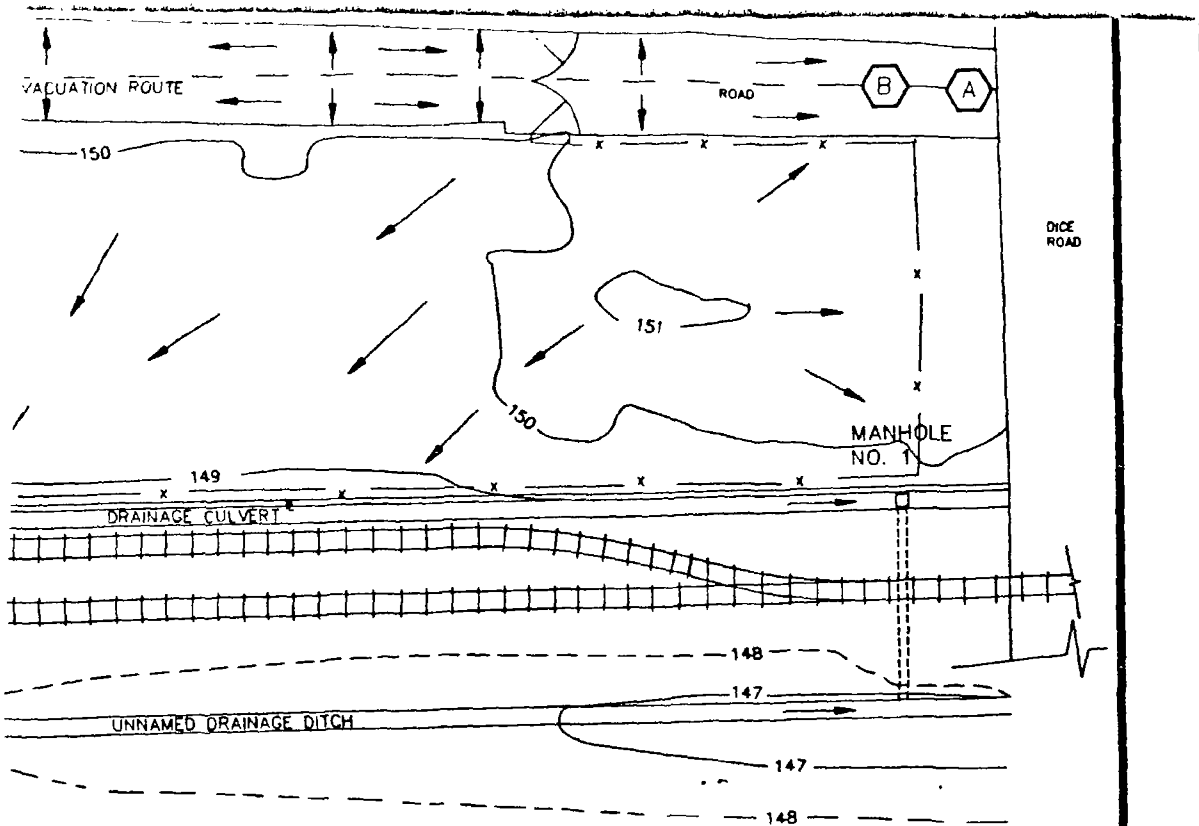
CDM
environmental engineers, scientists, planners & management consultants

SOUTHERN CALIFORNIA CHEMICAL
8851 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA

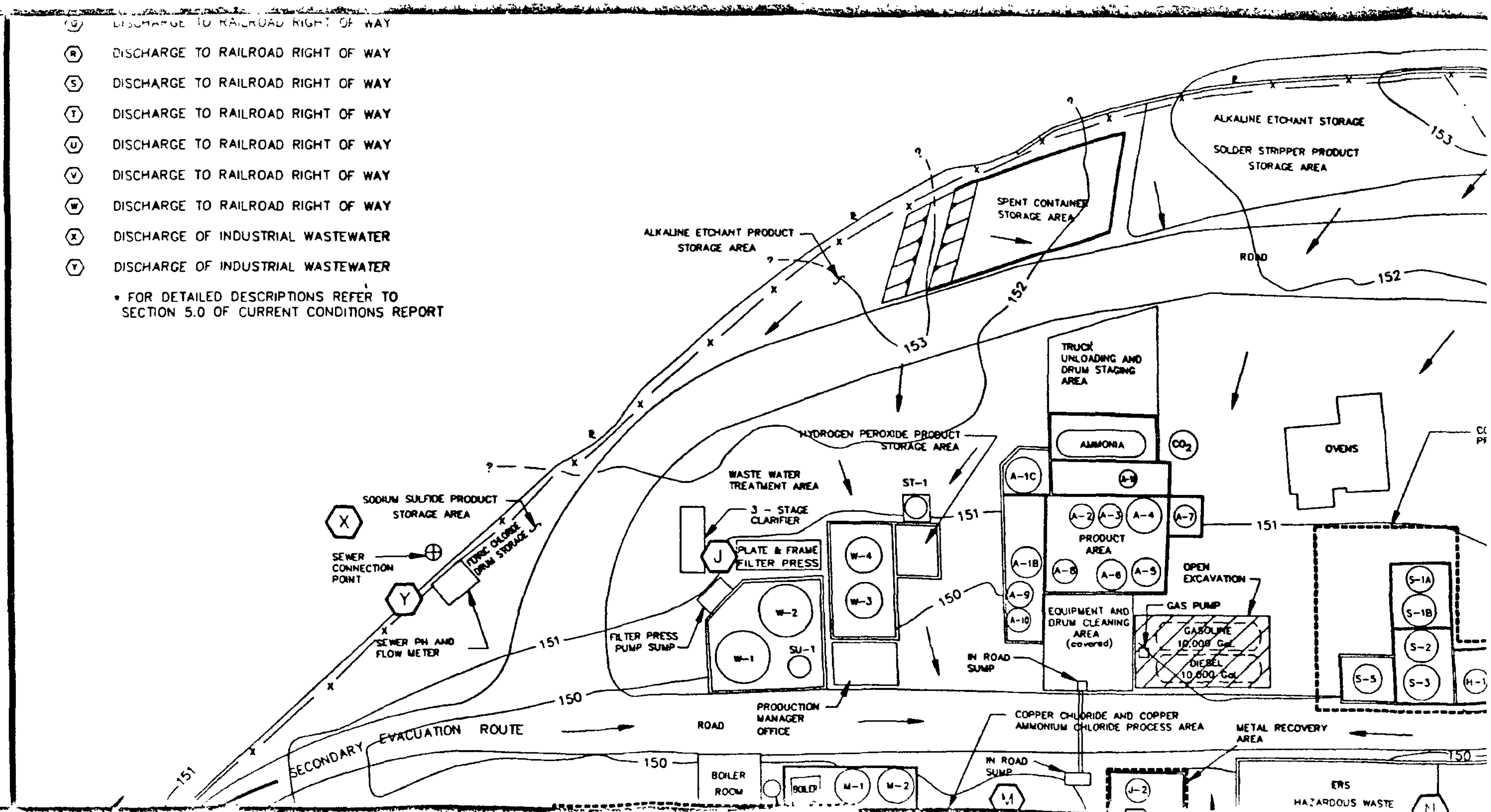
CLIENT

SITE TOPOGRAPHY/DRAINAG
AND APPROXIMATE
DISCHARGE LOCATIONS

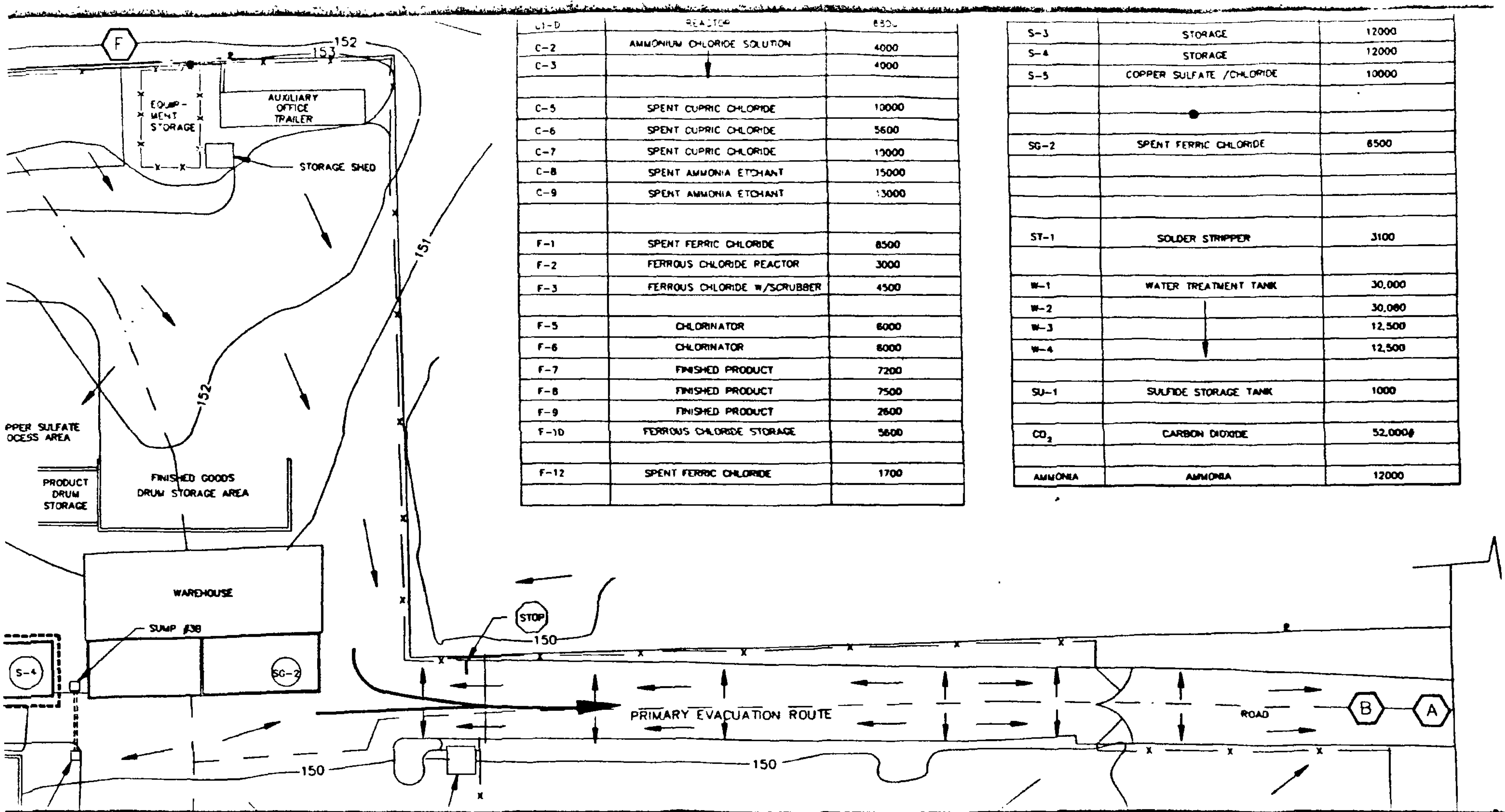
PROJECT



RNIA CHEMICAL ROAD S, CALIFORNIA	SITE TOPOGRAPHY/DRAINAGE AND APPROXIMATE DISCHARGE LOCATIONS PROJECT	SCALE 1"=30.0' JOB NUMBER 2279-111-A FIGURE 8



DISCHARGE TO RAILROAD RIGHT OF WAY
R DISCHARGE TO RAILROAD RIGHT OF WAY
S DISCHARGE TO RAILROAD RIGHT OF WAY
T DISCHARGE TO RAILROAD RIGHT OF WAY
U DISCHARGE TO RAILROAD RIGHT OF WAY
V DISCHARGE TO RAILROAD RIGHT OF WAY
W DISCHARGE TO RAILROAD RIGHT OF WAY
X DISCHARGE OF INDUSTRIAL WASTEWATER
Y DISCHARGE OF INDUSTRIAL WASTEWATER
* FOR DETAILED DESCRIPTIONS REFER TO SECTION 5.0 OF CURRENT CONDITIONS REPORT
ALKALINE ETCHANT STORAGE
SOLDER STRIPPER PRODUCT STORAGE AREA
SPENT CONTAINER STORAGE AREA
ALKALINE ETCHANT PRODUCT STORAGE AREA
ROAD
152
153
TRUCK UNLOADING AND DRUM STAGING AREA
HYDROGEN PEROXIDE PRODUCT STORAGE AREA
AMMONIA
CO_2
OVENS
WASTE WATER TREATMENT AREA
ST-1
SODIUM SULFIDE PRODUCT STORAGE AREA
X
3 - STAGE CLARIFIER
151
A-1C
A-2
A-3
A-4
A-7
PRODUCT AREA
SEWER CONNECTION POINT
J
PLATE & FRAME FILTER PRESS
W-4
A-1B
A-8
A-6
A-5
OPEN EXCAVATION
Y
W-3
W-2
150
A-9
A-10
EQUIPMENT AND DRUM CLEANING AREA (covered)
GAS PUMP
GASOLINE 10,000 Gal
DIESEL 10,000 Gal
S-1A
S-1B
S-2
S-3
S-5
SEWER PH AND FLOW METER
FILTER PRESS PUMP SUMP
W-1
SU-1
IN ROAD SUMP
PRODUCTION MANAGER OFFICE
COPPER CHLORIDE AND COPPER AMMONIUM CHLORIDE PROCESS AREA
METAL RECOVERY AREA
SECONDARY EVACUATION ROUTE
ROAD
BOILER ROOM
M-1
M-2
M
J-2
ERS HAZARDOUS WASTE
N



[illegible]	REACTOR	[illegible]
C-2	AMMONIUM CHLORIDE SOLUTION	4000
C-3		4000
C-5	SPENT CUPRIC CHLORIDE	10000
C-6	SPENT CUPRIC CHLORIDE	5600
C-7	SPENT CUPRIC CHLORIDE	13000
C-8	SPENT AMMONIA ETCHANT	15000
C-9	SPENT AMMONIA ETCHANT	13000
F-1	SPENT FERRIC CHLORIDE	8500
F-2	FERROUS CHLORIDE REACTOR	3000
F-3	FERROUS CHLORIDE W/SCRUBBER	4500
F-5	CHLORINATOR	6000
F-6	CHLORINATOR	6000
F-7	FINISHED PRODUCT	7200
F-8	FINISHED PRODUCT	7500
F-9	FINISHED PRODUCT	2600
F-10	FERROUS CHLORIDE STORAGE	5600
F-12	SPENT FERRIC CHLORIDE	1700

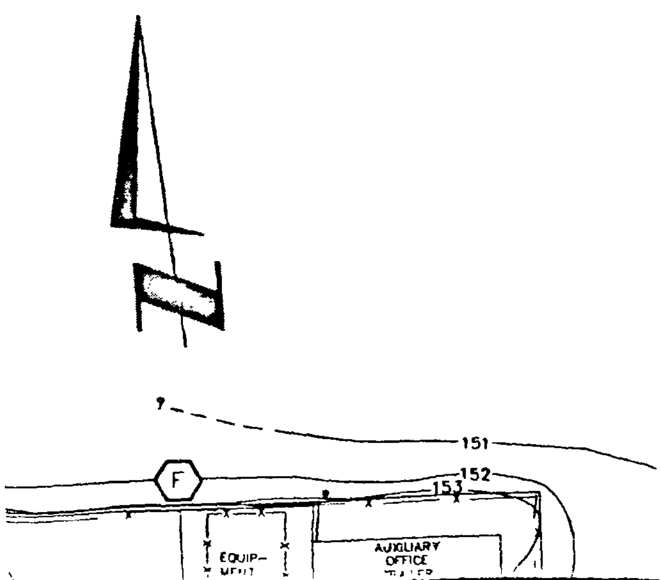
S-3	STORAGE	12000
S-4	STORAGE	12000
S-5	COPPER SULFATE /CHLORIDE	10000
SG-2	SPENT FERRIC CHLORIDE	6500
ST-1	SOLDER STRIPPER	3100
W-1	WATER TREATMENT TANK	30,000
W-2		30,080
W-3		12,500
W-4		12,500
SU-1	SULFIDE STORAGE TANK	1000
CO_2	CARBON DIOXIDE	52,000#
AMMONIA	AMMONIA	12000

APPROXIMATE DISCHARGE LOCATIONS *

- (A) DISCHARGE OF HEXAVALENT CHROME TO ROAD ENTRANCE
- (B) DISCHARGE OF CAUSTIC WASTE TO GROUND AND SERVICE ROAD
- (C) DISCHARGE OF SLUDGE TO BERMED PIT AND DRAINAGE DITCH
- (D) DISCHARGE OF MISCELLANEOUS WASTES TO UNKNOWN LOCATIONS
- (E) DISCHARGE OF HAZARDOUS WASTES TO UNKNOWN LOCATIONS
- (F) DISCHARGE OF DRUM CONTENTS TO NEIGHBORING PROPERTY
- (G) LEAK/FAILURE OF COPPER SULFATE PRODUCTION TANK
- (H) RECURRING DISCHARGES OF FERRIC AND FERROUS CHLORIDE
- (I) DISCHARGE FROM RAINWATER HOLDING TANK
- (J) OVERFLOW OF SUMP 10
- (K) FILTER PRESS SPILLAGE
- (L) RELEASE OF AMMONIA VAPOR
- (M) LEAK OF CUPRIC CHLORIDE TANK
- (N) SPILLED WASTES
- (O) DISCHARGE TO RAILROAD RIGHT OF WAY
- (P) DISCHARGE TO RAILROAD RIGHT OF WAY
- (Q) DISCHARGE TO RAILROAD RIGHT OF WAY
- (R) DISCHARGE TO RAILROAD RIGHT OF WAY
- (S) DISCHARGE TO RAILROAD RIGHT OF WAY
- (T) DISCHARGE TO RAILROAD RIGHT OF WAY

LEGEND

℞	PROPERTY LINE
—x—x—	FENCE LINE
——→	SURFACE WATER FLOW
— · — · —	SURFACE FLOW DIVIDE
—— 150 ——	ELEVATION (FEET)
— — — —	ELEVATION INFERRED
(G)	APPROXIMATE DISCHARGE LOCATION



STORAGE TANK SUMMARY

TANK No	PRODUCT	CAPACITY (Gal)
	10% AQUA AMMONIA SOLUTION	
A-1B		8000
A-1C		8000
A-2		10000
A-3		8000
A-4		13000
A-5		8500
A-6		8000
A-7	3% HCL SOLUTION	3000
A-8	SCRUBBER & PUMP TANK	8000
A-9	AMMONIUM CHLORIDE SOLUTION	12000
A-10		4500
A-11	10% AMMONIUM HYDROXIDE SOLUTION	10000
C-1	AMMONIA RECOVERY	8000
C-1A	REACTOR	6000
C-1B	REACTOR	6000
C-1C	REACTOR	6000
C1-D	REACTOR	8800
C-2	AMMONIUM CHLORIDE SOLUTION	4000
C-3		4000
C-5	SPENT CUPRIC CHLORIDE	[illegible]

TANK No	PRODUCT	CAPACITY (Gal.)
H-1	SULFURIC ACID	6000
J-2	COPPER SULFATE SOLUTION	3300
J-3	METAL TREATMENT MIX TANK	5900
J-4	EMPTY	5400
M-1	MURIATIC ACID	12000
M-2		12000
M-3		8000
M-5		10000
N-1	CAUSTIC SODA SOLUTION	4800
N-2		5200
S-1A	REACTOR	7000
S-1B	REACTOR	7500
S-2	STORAGE	6000
S-3	STORAGE	12000
S-4	STORAGE	12000
S-5	COPPER SULFATE /CHLORIDE	10000

CURRENT CONDITIONS REPORT
APPENDICES
RCRA Facility Investigation
Southern California Chemical
June 8,1990

Prepared for:

CP Chemicals, Inc.
Southern California Chemical
Santa Fe Springs, CA

Prepared by:

CAMP DRESSER & McKEE INC.
Irvine, CA

QUARTERLY SAMPLING REPORT, SEPTEMBER 1988
SOUTHERN CALIFORNIA CHEMICAL,
J. H. KLEINFELDER, DECEMBER 1988

TABLE 1
WATER-QUALITY DATA
MONITORING WELL #1
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
	DATE SAMPLED													
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)	7.3		7.1		7.2	7.0	7.38	6.8	7.0	6.9	7.1		7.05	
TOC (mg/l)	3.7		19		35	21	ND 3	ND 3	13	32	10		8.5	
TOX (mg/l)	ND.05		ND.08		ND.08	ND.08	ND.08	ND.08	ND.08	ND.08	0.1		0.038	
Sp. Cond. (umhos/cm)	2300		3400		1650	3600	3200	2800	3400	3800	2975		2500	
Site-Specific Indicator Chemicals														
Chromium (total) (mg/l)	ND.0005		ND.03		ND.03	ND.03	ND.03	ND.04	ND.04	ND.04	0.08	ND.02	0.03	0.07
Chromium (HEX) (mg/l)	ND.05		ND.02		ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.1		ND.05	ND.05
Cadmium (mg/l)	ND.0002		ND.009		ND.02	ND.01	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)	ND.08		ND.02		ND.01	ND.04	ND.04	ND.02	0.10	ND.02	0.04			ND.02
Zinc (mg/l)	ND.019		0.18		0.04	ND.08	0.018	ND.03	0.06	ND.03	0.04		0.07	0.08
Chloride (mg/l)	330		300		650	920	700	570	720	770	430		460	630
Nitrate as N (mg/l)	7.0		3.7		0.5	1.3	4.06	5.3	ND.1	2.3	4.5		5.2	2.9
Nitrate as NO_3 (mg/l)	31		17		18	11	18	23	ND.4	11	19		23	

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Organic Compounds (EPA Method 624)														
1,1-Dichloroethane (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
1,1-Dichloroethylene (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
1,2-Dichloroethane (ug/l)			ND1		ND1	2	1	0.5	1	1	ND1		ND1	
Benzene (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND.7		ND.7	
Carbon Tetrachloride (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Chloroform (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Ethylbenzene (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Trichloroethylene (ug/l)			16		16	18	18	9	11	2.4	4		15	
Toluene (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Xylene (ug/l)			ND1		ND1	ND1		ND.5	ND.5	ND.5	ND1		ND1	
Methylene Chloride (ug/l)			ND1		ND1	ND1	ND1	ND2	ND.5	1.7	ND1		ND1	

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 2
WATER-QUALITY DATA
MONITORING WELL #2
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	DATE SAMPLED: 2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)	7.0		7.4		7.7	7.4	7.68	7.1	7.1	7.12	7.27		7.35	
TOC (mg/l)	34		4.8		ND3	ND3	ND3	ND3	ND3	ND3	ND1		ND1	
TOX (mg/l)	ND.05		ND.08		ND.08	ND.08	ND.08	ND.08	ND.08	ND.08	0.04		0.032	
Sp. Cond. (umhos/cm)	2300		1900		1800	2100	2280	1900	3400	1500	1550		1500	
Site-Specific Indicator Chemicals														
Chromium (total) (mg/l)	ND.0005	ND.033	ND.03		ND.03	ND.03	ND.03	ND.04	ND.04	ND.04	0.05	ND.02	ND.02	0.06
Chromium (HEX) (mg/l)	ND.05	ND.033	ND.03		ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.1		ND.05	ND.05
Cadmium (mg/l)	ND.0002		ND.009		ND.01	ND.03	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)	ND.08		ND.02		ND.02	ND.04	ND.04	ND.02	ND.02	ND.02	0.04			ND.02
Zinc (mg/l)	ND.019		ND.03		ND.04	ND.08	0.021	ND.031	ND.031	ND.03	0.03		ND.02	0.03
Chloride (mg/l)	270		180		220	410	510	250	700	180	110		160	160
Nitrate as N (mg/l)	2.1		5.8		5.4	5.0	6.25	7.2	8.8	7.2	7.2		7.2	7.1
Nitrate as NO_3 (mg/l)	9.1		26		24	22	27.7	32	39	32	32		32	

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Organic Compounds (EPA Method 624)														
1,1-Dichloroethane (ug/l)		4	3		ND1	5	9	21	20	2.5	ND1		ND1	
1,1-Dichloroethylene (ug/l)		3	ND1		ND1	3	5	0.9	11	0.94	ND1		ND1	
1,2-Dichloroethane (ug/l)		ND1	ND1		3	1	ND1	ND.5	2.2	ND.5	ND1		ND1	
Benzene (ug/l)		ND1	ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND.7		ND.7	
Carbon Tetrachloride (ug/l)		ND1	ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Chloroform (ug/l)		ND1	ND1		ND1	2	2	1	ND.5	0.73	ND1		ND1	
Ethylbenzene (ug/l)		ND1	ND1		3	2	ND1	ND.5	6.2	ND.5	ND1		ND1	
Trichloroethylene (ug/l)		21	22		12	38	67	20	93	40	5		23	
Toluene (ug/l)		ND1	ND1		3	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Xylene (ug/l)		ND1	ND1		2	ND1		ND.5	ND.5	ND.5	ND1		ND1	
Methylene Chloride (ug/l)		ND1	ND1		ND1	ND1	ND1	ND2	ND.5	11	ND1		ND1	

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 3
WATER-QUALITY DATA
MONITORING WELL #3
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)	7.4		7.0		7.2	7.2	7.55	6.9	7.0	5.9	6.78		7.10	
TOC (mg/l)	16		190		44	29	31	20.5	21	50	135		81	
TOX (mg/l)	0.17		ND.08		.18	.17	.21	.22	.15	.27	.10		0.24	
Sp. Cond. (umhos/cm)	1700		1500		2200	2200	2400	2300	2200	3300	1575		2100	
Site-Specific Indicator Chemicals														
Chromium (total) (mg/l)	ND.0005	ND.033	ND.03		ND.03	ND.03	ND.03	ND.04	ND.04	ND.04	.08	ND.02	ND.02	0.07
Chromium (HEX) (mg/l)	ND.05	ND.033	ND.02		ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.4		ND.05	ND.05
Cadmium (mg/l)	ND.0002	ND.011	ND .009		ND.01	ND.01	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)	ND.08		ND.02		ND.02	ND.04	ND.04	ND.02	ND.02	ND.02	ND.02		0.02	0.02
Zinc (mg/l)	ND.019		0.26		ND.04	ND.08	0.021	ND.031	ND.031	ND.03	ND.02		0.04	0.02
Chloride (mg/l)	170		76		400	520	550	420	380	740	190		350	840
Nitrate as N (mg/l)	3.0		ND 1		6.5	4.1	4.81	3.4	3.8	5.2	ND.2		2.7	4.8
Nitrate as NO_3 (mg/l)	13		ND4.4		29	18	21.3	15	17	23	ND1		12	

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Organic Compounds (EPA Method 624)														
1,1-Dichloroethane (ug/l)		6	ND50	5	4	5	5	4	1.6	6.9	ND10		ND50	ND25
1,1-Dichloroethylene (ug/l)		14	ND50	11	7	13	17	7.8	3.9	15	ND10		ND50	ND25
1,2-Dichloroethane (ug/l)		ND1	ND50	9	6	7	11	18	2.11	ND.5	36		ND50	ND25
Benzene (ug/l)		9	ND50	3	ND1	3	2	ND.5	ND.5	ND.5	ND10		ND35	ND17
Carbon Tetrachloride (ug/l)		73	ND50	78	110	58	87	50	73	87	ND10		ND50	ND25
Chloroform (ug/l)		46	ND50	36	97	33	45	20	22	ND.5	ND10		ND50	ND25
Ethylbenzene (ug/l)		ND1	95000	1100	ND1	310	4	ND.5	ND.5	290	8500		1700	1000
Trichloroethylene (ug/l)		320	ND50	160	170	200	160	98	70	150	14		150	150
Toluene (ug/l)		2	15000	11	ND1	ND1	ND1	ND.5	ND.5	ND.5	8500		550	ND25
Xylene (ug/l)		ND1	20000	2000	ND1	10		ND.5	ND.5	ND.5	23000		850	200
Methylene Chloride (ug/l)		ND1	ND50	ND1	ND1	2	ND1	ND2	ND2	9.6	ND10		ND50	100

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 4
WATER-QUALITY DATA
MONITORING WELL #4
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	DATE SAMPLED													
	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)	6.3		7.1		7.1	6.6	7.4	6.7	6.3	6.3	6.6		6.55	
TOC (mg/l)	36		26		110	79	98	26.5	133	90	46		57	
TOX (mg/l)	ND .05		.26		.19	2.3	1.40	.68	2.10	1.3	.36		0.73	
Sp. Cond. (umhos/cm)	6400		3600		3500	4250	4950	4000	11000	7300	4625		5900	
Site-Specific Indicator Chemicals														
Chromium (total) (mg/l)	500	550	61		120	180	170	98	440	190	140	238	218	180
Chromium (HEX) (mg/l)	500	500			120	180	170	100	430	232	140.		84	170
Cadmium (mg/l)	0.78	0.92	0.035		0.04	0.09	0.07	0.05	ND .01	.33	.06		0.13	0.12
Copper (mg/l)	ND .08		ND .02		ND .02	ND .04	ND .03	ND .02	ND .02	ND .02	ND .03		0.04	ND.02
Zinc (mg/l)	0.06		ND .03		ND .04	ND .08	ND .007	ND .03	ND .03	ND .03	ND .03		0.15	ND.02
Chloride (mg/l)	2300		1100		770	1300	1400	960	3500	1800	790		1600	1400
Nitrate as N (mg/l)	18	12	ND 13		0.5	1.3	1.1	ND .1	ND .7	1.3	.2		0.75	3.9
Nitrate as NO_3 (mg/l)	81	55	ND 55		2.4	5.6	5.0	ND .4	ND 3	5.8	1.1		3.3	

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Organic Compounds (EPA Method 624)														
1,1-Dichloroethane (ug/l)		100	100	42	57	61	120	27	110	120	70		130	100
1,1-Dichloroethylene (ug/l)		100	42	34	41	61	67	20	94	110	56		60	50
1,2-Dichloroethane (ug/l)		ND 50	17	34	61	12	140	74	74	100	35		90	70
Benzene (ug/l)		ND 50	16	9	ND 1	ND 10	5	ND 5	ND 5	ND .5	ND 14		20	ND.7
Carbon Tetrachloride (ug/l)		ND 50	ND 1	ND 1	ND 1	ND 10	ND 1	ND 5	ND 5	1.5	ND 20		ND 10	ND10
Chloroform (ug/l)		ND 50	7	3	8	10	12	6.2	30	23	ND 20		23	ND10
Ethylbenzene (ug/l)		3000	36	50	1100	670	220	160	1500	380	70		40	ND10
Trichloroethylene (ug/l)		550	140	170	200	280	290	180	280	190	110		250	250
Toluene (ug/l)		8300	130	25	330	260	220	240	3700	580	180		90	ND10
Xylene (ug/l)		10000	100	30	300	300	300	731	2700	570	200		120	40
Methylene Chloride (ug/l)		100	12	ND 1	17	ND 10	ND 1	27	140	110	ND 20		110	70

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 5
WATER-QUALITY DATA
MONITORING WELL #4A
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
							DATE SAMPLED							
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)		6.8	7.5		7.6	7.5	7.7		7.7	7.2	7.3		7.45	
TOC (mg/l)		40	8.3		ND3	ND3	ND3		ND3	ND3	ND1		ND1	
TOX (mg/l)		ND.05	ND.08		ND.08	ND.08	ND.08		.14	ND.03	ND.01		0.15	
Sp. Cond. (umhos/cm)		1500	1500		850	1400	1535		1600	1700	1662		1550	
Site-Specific Indicator Chemicals														
Chromium (Total) (mg/l)		ND.03	ND.03		ND.03	ND.03	ND.03		ND.04	ND.04	.03	.02	ND.02	0.06
Chromium (HEX) (mg/l)		ND.5			ND.02	ND.02	ND.02		ND.02	ND.02	ND.1		ND.05	ND.05
Cadmium (mg/l)		ND.01	ND.01		ND.01	ND.01	ND.01		ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)			ND.02		ND.02	ND.04	ND.03		ND.02	ND.02	ND.02		0.02	ND.02
Zinc (mg/l)			ND.03		ND.04	ND.08	ND.007		ND.03	ND.03	ND.02		ND.02	0.02
Chloride (mg/l)			100		110	120	130		160	129	97		100	160
Nitrate as N (mg/l)		4.5	7.5		6.1	4.7	6.3		5.4	6.1	3.8		6.1	6.3
Nitrate as NO_3 (mg/l)		20	33		27	21	28		24	27	17		27	

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Organic Compounds (EPA Method 624)														
1,1-Dichloroethane (ug/l)			13		11	3	19		140	1.2	ND1		ND10	
1,1-Dichloroethylene (ug/l)			1		2	ND1	2		50	ND.5	ND1		ND10	
1,2-Dichloroethane(ug/l)			ND1		ND1	ND1	2		1.5	ND.5	ND1		ND10	
Benzene (ug/l)			8		ND1	ND1	ND1		ND.5	ND.5	ND.7		ND7	
Carbon Tetrachloride (ug/l)			ND1		ND1	ND1	ND1		ND.5	ND.5	ND1		ND10	
Chloroform (ug/l)			ND1		ND1	ND1	2		17	ND.5	ND1		ND10	
Ethylbenzene (ug/l)			ND1		ND1	ND1	ND1		ND.5	ND.5	ND1		ND10	
Trichloroethylene (ug/l)			8		7	3	12		82	3.2	ND1		ND20	
Toluene (ug/l)			ND1		ND1	ND1	ND1		1.5	ND.5	ND1		ND10	
Xylene (ug/l)			ND1		ND1	ND1			ND.5	ND.5	ND1		ND10	
Methylene Chloride (ug/l)			ND1		ND1	ND1	ND1		11	ND.5	ND1		100	

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 6

WATER-QUALITY DATA

MONITORING WELL #5

SOUTHERN CALIFORNIA CHEMICAL

PROJECT 50-1014-03

EPA Indicator Measurement (CFR 40 265.92)

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
pH (units)	7.3		7.4		7.3	7.3	7.82	6.9	7.0	7.6	7.06		7.10	
TOC (mg/l)	ND3		4.8		5	3	ND3	ND3	ND3	5	7		21	
TOX (mg/l)	.19		.16		.65	.18	.30	.45	.36	ND.03	.3		0.13	
Sp. Cond. (umhos/cm)	1700		1200		1400	1100	1220	1400	1400	1300	1537		1400	

Site-Specific Indicator Chemicals

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Chromium (total) (mg/l)	ND.0005		ND.03		ND.03	ND.03	ND.03	ND.04	ND.04	ND.04	.1	ND.02	0.05	0.05
Chromium (HEX) (mg/l)	ND.05		ND.02		ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.1		ND.1	ND.05
Cadmium (mg/l)	ND.0002		ND.009		ND.01	ND.01	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)	ND.08		ND.02		ND.02	ND.04	ND.04	ND.02	ND.02	ND.02	ND.02		ND.02	ND.02
Zinc (mg/l)	ND.019		0.18		ND.04	ND.08	ND.001	ND.031	ND.03	ND.03	.4		ND.02	ND.02
Chloride (mg/l)	2.0		66		79	290	143.5	110	110	100	90		91	93
Nitrate as N (mg/l)	0.42		8.8		12	8.6	11.13	10	15	3.4	5		14	3.6
Nitrate as NO_3 (mg/l)	1.9		39		55	38	49.3	45	65	24	22		3.1	

Note: ND 1 = Chemical was not detected at 1 mg/l.

Organic Compounds (EPA Method 624)

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
1,1-Dichloroethane (ug/l)		ND1	ND 1		2	2	7	4	5.4	.29	ND1		ND1	
1,1-Dichloroethylene (ug/l)		ND1	ND1		3	3	4	2.7	5.2	.25	ND1		ND1	
1,2-Dichloroethane (ug/l)		ND1	ND1		ND1	ND1	ND1	ND.5	ND.5	ND.3	ND1		7	
Benzene (ug/l)		5	ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND.7		ND.7	
Carbon Tetrachloride (ug/l)		3	11		45.5	37	68	100	120	99	20		26	
Chloroform (ug/l)		2	10		14.5	16	43	48	50	95	10		18	
Ethylbenzene (ug/l)		ND1	ND1		ND1	6	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Trichloroethylene (ug/l)		10	24		64	36	70	70	59	26	5		18	
Toluene (ug/l)		1	ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Xylene (ug/l)		ND1	ND1		ND1	ND1		ND.5	7.3	ND.5	ND1		ND1	
Methylene Chloride (ug/l)		ND1	ND1		ND1	ND1	ND1	ND2	ND.5	4.3	ND1		ND1	

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 7
WATER-QUALITY DATA
MONITORING WELL #6B
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
	DATE SAMPLED													
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)	7.6		7.4		7.5	7.8	7.6	7.1	7.4	7.1	7.13		7.10	
TOC (mg/l)	ND3		6.5		ND3	ND3	ND3	ND3	ND3	9	ND1		ND1	
TOX (mg/l)	0.1		ND.08		ND.08	ND.08	ND.08	ND.08	ND.08	ND.03	.02		ND.01	
Sp. Cond. (umhos/cm)	1400		1300		1400	1200	1425	1400	1600	1400	1265		1300	
Site-Specific Indicator Chemicals														
Chromium (total) (mg/l)	0.0038		ND.03		ND .03	ND.02	ND.03	ND.04	ND.04	ND.04	.02	ND.02	ND.02	0.05
Chromium (HEX) (mg/l)	ND.05		ND.02		ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.1		ND.05	ND.05
Cadmium (mg/l)	ND.0002		ND.009		ND.01	ND.01	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)	ND.08		ND.02		ND.02	ND.04	ND.03	ND.02	ND.02	ND.02	ND.02		ND.02	ND.02
Zinc (mg/l)	ND.03		ND.03		ND.04	ND.08	ND.007	ND.03	ND.03	ND.03	ND.02		.02	ND.02
Chloride (mg/l)	79		220		82	100	140	92	130	94	61		89	100
Nitrate as N (mg/l)	6.9		8.8		7.0	5.2	6.1	7	8.4	8.4	8.4		7.3	8.0
Nitrate as NO_3 (mg/l)	28		39		31	23	27	31	37	37	37		32	

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Organic Compounds (EPA Method 624)														
1,1-Dichloroethane (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
1,1-Dichloroethylene (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
1,2-Dichloroethane (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Benzene (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND.7		ND.7	
Carbon Tetrachloride (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Chloroform (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	
Ethylbenzene (ug/l)			ND1		ND1	ND1	ND1	ND.5	1.5	ND.5	ND1		ND1	
Trichloroethylene (ug/l)			30		19	23.5	24	21	20	33	22		21	
Toluene (ug/l)			ND1		ND1	ND1	ND1	ND.5	0.8	ND.5	ND1		ND1	
Xylene (ug/l)			ND1		ND1	ND1		ND.5	7.9	ND.5	ND1		ND1	
Methylene Chloride (ug/l)			ND1		ND1	ND1	ND1	ND.5	2.6	1.2	ND1		ND1	

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 8
WATER-QUALITY DATA
MONITORING WELL #7
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

DATE SAMPLED

EPA Indicator Measurement (CFR 40 265.92)

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
pH (units)		6.3	7.3		7.4	7.2	7.3	6.5	6.8	7.3	8.94		6.95	
TOC (mg/l)		260	6.5		5	17	ND3	43	7	5	2		4.9	
TOX (mg/l)		0.081	ND.08		ND.08	ND.08	ND.08	ND.08	.11	ND.03	.08		0.18	
Sp. Cond. (umhos/cm)		2700	1700		1900	5600	5850	3700	3300	5000	8500		2800	

Site-Specific Indicator Chemicals

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Chromium (total) (mg/l)		ND.03	ND.03		ND.03	ND.03	ND.03	ND.04	ND.04	ND.04	.02	ND.02	0.07	0.04
Chromium (HEX) (mg/l)		ND.5	ND.02		ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.1		ND.1	ND.05
Cadmium (mg/l)		ND.01	ND.009		ND.01	ND.01	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)			ND.02		ND.02	ND.04	ND.03	ND.02	0.08	ND.02	ND.02		ND.02	ND.02
Zinc (mg/l)			ND.03		ND.04	ND.04	0.022	ND.03	0.04	ND.03	ND.02		ND.02	ND.02
Chloride (mg/l)		380	190		280	1800	1700	630	610	1200	1900		570	1400
Nitrate as N (mg/l)		27	5.0		4.3	2.7	4.4	19	25	1.1	ND0.2		ND.2	5.5
Nitrate as NO_3 (mg/l)		120	22		19	12	19.5	82	110	19	ND1		ND1	

Note: ND 1 = Chemical was not detected at 1 mg/l.

Organic Compounds (EPA Method 624)

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
1,1-Dichloroethane (ug/l)		2			8	42	30	7.1	14	6	ND1		ND1	
1,1-Dichloroethylene (ug/l)		ND1			2	5	6	ND5	6	.55	ND1		ND1	
1,2-Dichloroethane (ug/l)		ND1			ND1	2	ND1	ND5	ND.5	ND.5	ND1		ND1	
Benzene (ug/l)		64			ND1	ND1	ND1	ND5	ND.5	ND.5	ND.7		ND.7	
Carbon Tetrachloride (ug/l)		ND1			ND1	ND1	ND1	ND5	ND.5	ND.5	ND1		ND1	
Chloroform (ug/l)		ND1			ND1	ND1	ND1	8.2	ND.5	ND.5	ND1		ND1	
Ethylbenzene (ug/l)		ND1			4	ND1	ND1	1.0	ND.5	ND.5	ND1		ND1	
Trichloroethylene (ug/l)		29			67	71	70	180	130	35	24		100	
Toluene (ug/l)		2			5	ND1	ND1	2.2	3.6	ND.5	ND1		ND1	
Xylene (ug/l)		ND1			4	ND1		ND5	ND.5	ND.5	ND1		ND1	
Methylene Chloride (ug/l)		ND1			ND1	ND1	ND1	ND5	ND.5	1.1	ND1		ND1	

Notes: ND 1 = Compound was not detected at 1 ug/l.

TABLE 9
WATER-QUALITY DATA
MONITORING WELL #8
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88	
EPA Indicator Measurement (CFR 40 265.92)															
pH (units)		6.6	7.5		7.4	7.4	7.4	6.9	7.1	7.1	7.23		7.25		
TOC (mg/l)		99	7		8	ND3	ND3	ND3	5	ND3	ND1		1.5		
TOX (mg/l)		0.44	.09		ND.08	.10	.15	ND.08	.19	ND.08	.04		.06		
Sp. Cond. (umhos/cm)		2800	1500		1700	1600	1800	2000	2100	1300	1550		1,600		
Site-Specific Indicator Chemicals															
Chromium (total) (mg/l)		ND.05	ND.03		ND.03	ND.03	ND.03	ND.04	ND.04	ND.04	.03	ND.02	ND.02	0.05	
Chromium (HEX) (mg/l)		ND.05	ND.02		ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.1		ND.05	ND.05	
Cadmium (mg/l)		ND.01	ND.009		ND.01	ND.01	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01	
Copper (mg/l)			ND.02		ND.02	ND.04	ND.03	ND.02	ND.02	ND.02	ND.02		ND.02	ND.02	
Zinc (mg/l)			ND.03		ND.04	ND.08	ND.001	ND.03	ND.03	ND.03	ND.02		0.05	0.04	
Chloride (mg/l)			530		170	270	250	300	300	120	140		190	130	
Nitrate as N (mg/l)		1.3	4.2		3.2	2.7	3.2	2.5	2.2	4.3	4.5		3.7	5.7	
Nitrate as NO_3 (mg/l)		5.8	39		14	12	14.1	11	10	19	20		16		

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88	
Organic Compounds (EPA Method 624)															
1,1-Dichloroethane (ug/l)			41		76	160	160	55	160	45	50		42	2	
1,1-Dichloroethylene (ug/l)			3		8	17	19	5.6	29	5.5	2.8		6	ND1	
1,2-Dichloroethane (ug/l)			1		14	14	6	9.5	16	ND.5	ND1		3	30	
Benzene (ug/l)			ND1		ND1	ND1	ND1	ND.5	ND.5	ND.5	ND.7		ND.7	ND.7	
Carbon Tetrachloride (ug/l)			ND1		ND1	ND1	8	ND.5	ND.5	ND.5	ND1		ND1	ND1	
Chloroform (ug/l)			ND1		2	2	2	5.6	ND.5	0.55	ND1		ND1	ND1	
Ethylbenzene (ug/l)			ND1		2	ND1	ND1	ND.5	ND.5	ND.5	ND1		ND1	ND1	
Trichloroethylene (ug/l)			19		28	52	44	67	51	25	17		27	20	
Toluene (ug/l)			ND1		3	ND1	ND1	2.3	ND.5	ND.5	ND1		N[illegible]	ND1	
Xylene (ug/l)			ND1		1	ND1		ND.5	ND.5	ND.5	ND1		ND1	ND1	
Methylene Chloride (ug/l)			5		ND1	ND1	ND1	ND.5	2.4	3.0	ND1		ND1	ND1	ND1

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 10
WATER-QUALITY DATA
MONITORING WELL #9
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
	DATE SAMPLED													
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)		6.4	7.4		7.3	7.0	7.4	6.9	6.8	6.9	7.15		7.0	
TOC (mg/l)		210	14		28	2.8	24	ND3	42	15	3		4.0	
TOX (mg/l)		0.13	.26		.12	.28	.37	.37	.48	.28	.16		0.22	
Sp. Cond. (umhos/cm)		2200	2800		2000	2400	2675	2500	3200	3100	2075		1950	
Site-Specific Indicator Chemicals														
Chromium (total) (mg/l)		ND.03	ND.03		ND.03	ND.03	ND.03	ND.04	0.12	.94	1.30	2.42	1.66	2.75
Chromium (HEX) (mg/l)		ND.05	ND.02		ND.02	0.05	ND.02	ND.02	0.05	.59	1.30		0.8	1.5
Cadmium (mg/l)		ND.01	ND.00		ND.01	ND1	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)			ND.02		ND.02	ND.04	ND.03	ND.02	ND.02	ND.02	ND.02		ND.02	ND.02
Zinc (mg/l)			ND.03		ND.04	ND.08	0.018	ND.03	ND.03	ND.03	ND.02		0.05	0.03
Chloride (mg/l)		300	530		250	720	670	470	640	630	290		290	490
Nitrate as N (mg/l)		1.4	8.8		3.2	1.4	3.72	4.1	2.9	8.4	7.2		5.0	7.6
Nitrate as NO_3 (mg/l)		6.3	39		14	6.2	16.5	18	13	37	32		22	

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Organic Compounds (EPA Method 624)														
1,1-Dichloroethane (ug/l)			99		50	360	250	110	140	130	40		ND10	90
1,1-Dichloroethylene (ug/l)			18		18	200	110	44	72	84	50		29	30
1,2 Dichloroethane (ug/l)			10		13	90	52	90	69	ND.5	6		90	ND10
Benzene (ug/l)			ND1		ND1	ND5	ND1	ND.5	ND2.5	ND.5	ND.7		ND7	ND7
Carbon Tetrachloride (ug/l)			ND1		ND1	ND5	ND1	ND.5	ND2.5	ND.5	ND1		ND10	ND10
Chloroform (ug/l)			20		4	30	22	10	19	28	13		ND10	10
Ethylbenzene (ug/l)			ND1		ND1	ND5	ND1	ND.5	ND2.5	ND.5	ND1		ND10	ND10
Trichloroethylene (ug/l)			61		3	550	240	150	160	150	17		120	90
Toluene (ug/l)			ND1		ND1	ND5	ND1	0.7	ND2.5	ND.5	ND1		ND10	ND10
Xylene (ug/l)			ND1		ND1	ND5		ND.5	ND2.5	ND.5	ND1		ND10	ND10
Methylene Chloride (ug/l)			110		ND1	ND5	18	29	33	83	35		ND10	10

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 11
WATER-QUALITY DATA
MONITORING WELL #10
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	DATE SAMPLED: 2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)		6.8	7.8		7.6	7.4	7.8	7.4	7.2	7.1	7.51		7.20	
TOC (mg/l)		440	10		130	103	135	33.8	158	56	7		29	
TOX (mg/l)		0.17	ND.08		ND.08	.14	.15	.20	.62	.18	.06		0.22	
Sp. Cond. (umhos/cm)		2100	1300		1600	1400	1550	1600	2100	1900	1355		1800	
Site-Specific Indicator Chemicals														
Chromium (total) (mg/l)		ND.03	ND.03		ND.03	ND.03	ND.03	ND.04	ND.04	ND.04	.08	.05	0.05	0.06
Chromium (HEX) (mg/l)		ND.5			ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.1		ND.05	ND.05
Cadmium (mg/l)		ND.01			ND.01	ND.01	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)			ND.02		ND.02	ND.04	ND.03	ND.02	ND.02	ND.02	ND.02		0.05	ND.02
Zinc (mg/l)			ND.03		ND.04	ND.08	ND.007	ND.03	ND.03	ND.03	ND.02		0.35	ND.02
Chloride (mg/l)			150		120	150	160	160	260	230	100		210	230
Nitrate as N (mg/l)		ND.1	ND.1		0.1	ND.01	ND.1	ND.1	ND.1	ND.1	ND.2		ND.2	ND.2
Nitrate as NO_3 (mg/l)		ND4.4	ND4.4		0.6	ND.04	ND.4	ND.4	ND.4	ND.4	ND1		ND1	

Note: ND 1 = Chemical was not detected at 1 mg/l.

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
Organic Compounds (EPA Method 624)														
1,1-Dichloroethane (ug/l)		ND50	2		6	ND10	20	ND5	23	21	3.7		32	ND5
1,1-Dichloroethylene (ug/l)		ND50	1		7	14	ND20	ND5	41	28	ND1		21	ND5
1,2-Dichloroethane (ug/l)		ND50	17		86	200	270	63	160	93	15		70	40
Benzene (ug/l)		ND50	ND1		ND1	ND10	ND20	ND5	ND2.5	ND.5	ND.7		ND7	ND3
Carbon Tetrachloride (ug/l)		ND50	ND1		ND1	ND10	ND20	ND5	ND2.5	ND.5	ND1		ND10	ND5
Chloroform (ug/l)		50	ND1		ND1	ND10	ND20	ND5	3.1	2.3	ND1		ND10	ND5
Ethylbenzene (ug/l)		6500	68		ND1	2200	1800	330	2000	360	ND1		ND10	ND5
Trichloroethylene (ug/l)		250	29		56	93	120	62	160	130	14		90	60
Toluene (ug/l)		17000	ND1		ND1	36	560	ND5	14	ND.5	ND1		ND10	ND5
Xylene (ug/l)		20000	ND1		70	90	600	120	500	ND.5	ND1		ND10	ND5
Methylene Chloride (ug/l)		100	ND1		ND1	ND10	ND20	ND5	13	1.8	ND1		ND10	14

Note: ND 1 = Compound was not detected at 1 ug/l.

TABLE 12
WATER-QUALITY DATA
MONITORING WELL #11
SOUTHERN CALIFORNIA CHEMICAL
PROJECT 50-1014-03

COMPOUND	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
	DATE SAMPLED													
EPA Indicator Measurement (CFR 40 265.92)														
pH (units)		6.6	7.8		7.2	7.3	7.5	7.5	7.4	7.4	7.34		7.45	
TOC (mg/l)		54	13		120	156	125	26.8	58	61	12		20	
TOX (mg/l)		ND.05	0.1		ND.08	ND.08	.12	.14	.15	ND.08	.07		0.078	
Sp. Cond. (umhos/cm)		1600	1600		1700	1600	1800	1700	2100	1600	1895		1500	
Site-Specific Indicator Chemicals														
Chromium (total) (mg/l)		ND.03	ND.03		ND.03	ND.03	ND.03	ND.04	ND.04	ND.04	.04	ND.02	ND.02	0.05
Chromium (HEX) (mg/l)		ND.5			ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.1		ND.05	ND.05
Cadmium (mg/l)		ND.01	ND.01		ND.01	ND.01	ND.01	ND.01	ND.01	ND.02	ND.02		ND.01	ND.01
Copper (mg/l)			ND.02		ND.02	ND.04	ND.03	ND.02	ND.02	ND.02	ND.02		ND.01	ND.02
Zinc (mg/l)			ND.03		ND.04	ND.08	ND.001	ND.03	ND.03	ND.03	ND.02		ND.02	0.02
Chloride (mg/l)		220	230		180	230	240	170	270	110	86		120	110
Nitrate as N (mg/l)		1.2	2.5		1.1	ND1	0.1	1.2	0.7	1.5	2.2		1.5	1.7
Nitrate as NO_3 (mg/l)		5.2	11		4.8	ND.4	0.5	5.5	3.3	6.8	9.6		65	

Note: ND 1 = Chemical was not detected at 1 mg/l.

Organic Compounds (EPA Method 624)	2/85-3/85	7/85-8/85	3/86	5/86	7/86	9/86	12/86	3/87	6/87-7/87	10/87	2/88	5/88	6/88	9/88
1,1-Dichloroethane (ug/l)			10	4	10	ND200	ND100	6.9	12	2.3	2.5		ND10	ND5
1,1-Dichloroethylene (ug/l)			8	2	5	ND200	ND100	5.0	11	2.6	2.3		ND10	ND5
1,2-Dichloroethane (ug/l)			8	31	17	ND200	130	95	21	89	21		ND10	60
Benzene (ug/l)			ND1	3	ND1	ND200	ND100	1.5	ND.5	ND.5	ND.7		ND7	ND3
Carbon Tetrachloride (ug/l)			ND1	ND1	ND1	ND200	ND100	ND.5	ND.5	ND.5	ND1		ND10	ND5
Chloroform (ug/l)			3	3	10	ND200	ND100	3.3	3.5	1.0	ND1		ND10	ND5
Ethylbenzene (ug/l)			13	1800	2200	6400	3300	ND.5	1200	180	17		ND10	130
Trichloroethylene (ug/l)			110	36	76	ND200	180	46	81	36	20		70	30
Toluene (ug/l)			ND1	5400	5200	14000	7500	3.6	360	ND.5	ND1		ND10	ND5
Xylene (ug/l)			20	4000	1500	10000	3000	220	370	ND.5	ND1		110	ND5
Methylene Chloride (ug/l)			ND1	ND1	ND1	ND200	ND100	1.8	8.4	ND.5	3		ND10	16

Note: ND 1 = Compound was not detected at 1 ug/l.